JUNE 1923 25 CENTS

PHOTO-ERA MAGAZINE

The American Journal of Photography

PUBLISHED MONTHLY
FOR THE
AMATEUR AND PROFESSIONAL

For Quality Prints with a minimum of effort, the AMATEUR should use

RONIX

The One-Operation Paper

NOTHING COULD BE MORE SIMPLE than the handling of Ronix. Being a Self-Toning Printing-Out Paper, it is but necessary to print it in daylight (either north light or sunlight) and to fix in Hypo.

Tones ranging from rich Sepias to cold Blues are produced by this easy process by merely varying the strength of the Hypo-solution. The brilliant results obtained are uniformly excellent and absolutely permanent and are of an artistic beauty that will surprise the user.

Try RONIX with your "Pet" Negative

The Gevaert Company of America, Inc.

117 West 46th Street **New York**

Ask for Catalog

Contents for June, 1923

ILLUSTRATIONS

The Portico, Union Station	*Mortimer N. Bremon*	Cover
The Portico, Union Station	*Mortimer N. Bremon*	Frontispiece
Portland Harbor	*S. S. Skolfield*	294
Wharves and the Ships	*E. Roy Monroe*	295
Portland Society of Art	*Floyd Grant*	296
Portland City Hall	*Dr. Rupert S. Lovejoy*	297
The Heaving Breast of the Deep	*Alfred Brinkler*	298
Exchange Street and City Hall	*J. Ludger Rainville*	299
Longfellow Square in the Mist	*Dr. Rupert S. Lovejoy*	299
Main Entrance, Portland City Hall	*Henry A. Peabody*	300
Side Entrance, Portland High School	*Francis O. Libby*	301
Normal Hands	*R. L. Edmonson*	303
Human Skull	*R. L. Edmonson*	304
Ankle Joint	*R. L. Edmonson*	305
Fracture of Both Bones of Leg	*R. L. Edmonson*	306
Mallard Beauties	*H. T. Middleton*	308
Green Wing, the Heron	*H. T. Middleton*	309
Catbird and Young	*H. T. Middleton*	309
Song-Sparrows	*H. T. Middleton*	310
Snow Wing Fishing	*H. T. Middleton*	311
Snow Wing in Flight	*H. T. Middleton*	311
Foul Murder Has Been Done	*H. T. Middleton*	312
Young Kingfishers	*H. T. Middleton*	312
Flying Egret	*H. T. Middleton*	313
Summer-Shadows	*William S. Davis*	315
Clad in Nature's Rich Array	*William S. Davis*	316
Willows by the Waterside	*William S. Davis*	317
One October Morn	*J. Herbert Saunders*	322
First Prize—Child-Studies	*W. P. Bruning*	325
Second Prize—Child-Studies	*Louis F. Bucher*	326
Third Prize—Child-Studies	*Herbert J. Harper*	327
First Prize—Beginners' Competition	*Mrs. G. Bell*	331
Second Prize—Beginners' Competition	*Charles Ditchfield*	332

ARTICLES

Portland, Maine	*Henry A. Peabody*	293
Making Pictures in Total Darkness	*R. L. Edmonson*	302
After the Negative is Made	*The British Journal*	306
An Idyl of the Rancocas Marshes	*Howard Taylor Middleton*	308
Summer Foliage-Effects	*William S. Davis*	314
More About Hot-Weather Photography	*W. X. Kincheloe*	318

To Contributors: Contributions relating to photography are solicited and will receive careful consideration. Preference is given to MS. that is typewritten, and to authors who are practical amateur or professional photographers.

To Subscribers: A reminder of expiration will be enclosed with the last issue of every subscription at the time the copy is mailed. Prompt renewal will ensure the uninterrupted receipt of the magazine for the following year. Send both old and new addresses, when requesting a change.

To Advertisers: Advertising-rates on application. Forms close on the 5th of the preceding month.

Sample Copies: A sample copy will be mailed to any address for 25 cents in currency or stamps.

Published Monthly, on the 1st, at Wolfeboro, New Hampshire, U.S.A.

Entered as Second-Class Matter at the Post-Office, Wolfeboro, N.H., under the act of March 3, 1879.

Copyright, 1923, by Photo-Era Magazine. All rights reserved.

Yearly Subscription-Rates: United States and Mexico, $2.50 postpaid; single copy, 25 cents. Canadian subscription, $2.85 postpaid; single copy, 30 cents. Foreign subscription, $3.25 postpaid.

Foreign Agents: England, Houghtons, Ltd., 88–89 High Holborn, London, W.C. **Scotland,** Robert Ballantine, 103½ St. Vincent St., Glasgow. **Japan,** Maruzen Company, Ltd., 11–16 Nihonbashi, Tori-Sanchome, Tokyo. **Australia,** Kodak, Australasia, Ltd., Sydney. **India,** American Advertising Syndicate, 66 Tamarind Lane, Fort, Bombay.

Photo-Era Magazine, The American Journal of Photography

WILFRED A. FRENCH, Managing-Editor; A. H. BEARDSLEY, Associate-Editor and Publisher

Wolfeboro, New Hampshire, U.S.A.

(Printed in U.S.A.)

CATCHES——HOLDS——PRESERVES

Ilex Paragon Anastigmat F/4.5

Ever-changing Nature constantly presents unique and beautiful spectacles which dazzle our eyes, pass out, and never respond to an encore.

To perpetuate such spectacles, a dependable quick-action lens is imperative.

THE ILEX PARAGON
Anastigmat F/4.5

never fails or disappoints. It is scientifically constructed to attain the greatest speed, render snap, brilliancy and knife-like sharpness of definition; and, at the same time, to reproduce in their true values the marvels of action, scenery and beauty.

Portrait-work with this wonder-lens does not mean simply "making a picture"; but it is a truthful transferring of life to the negative.

It has met the requirements of the most exacting photographers who desired a lens for the impressionistic rendering of character, such as distinguishes the work of the best portrait-artists of today.

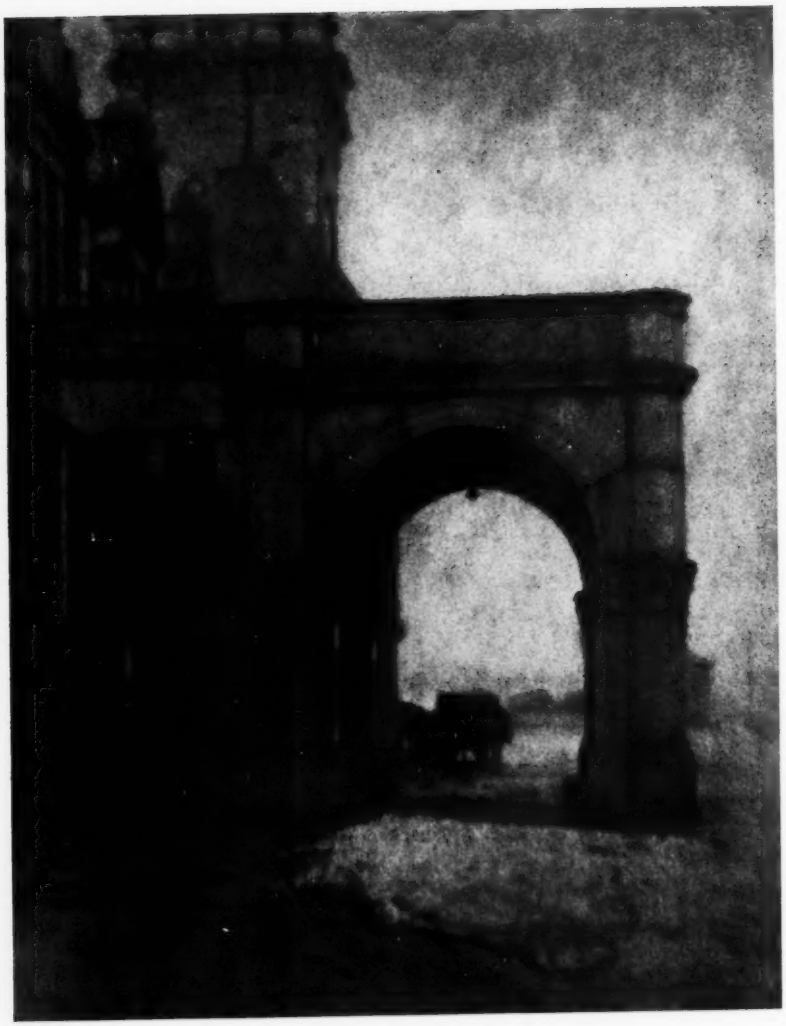
The marvelous blending of the outlines and tone-gradations renders exquisite modeling, and, combined with the diffusing-arrangement, gives the worker perfect control of any degree of softness which he may desire.

The universality and adaptability of this remarkable, scientifically developed lens makes it an indispensable equipment which no photographer can afford to overlook.

At all established photographic dealers or particulars direct

ILEX OPTICAL COMPANY

ROCHESTER, NEW YORK, U.S.A.



THE PORTICO, UNION STATION
MORTIMER N. BREMON
PORTLAND CAMERA CLUB

PHOTO-ERA MAGAZINE

The American Journal of Photography

Copyright, 1923, by PHOTO-ERA MAGAZINE

Vol. L **JUNE, 1923** **No. 6**

Portland, Maine

HENRY A. PEABODY

"Often I think of the beautiful town
That is seated by the sea;
Often in thought go up and down
The pleasant streets of that dear old town,
And my youth comes back to me."

TODAY, even as in the days of Longfellow, the sons and daughters of Portland who have gone forth to acquire fame and fortune in other lands still have a kindly thought in their hearts for the dear old city in which they were born and reared. And many of them return in later years to make it once more their home; and, as they spread the fame of Portland, its history, the beauty of its scenery, and the old-fashioned hospitality of its people, it is becoming more and more the playground of thousands who seek rest, recreation and health.

Situated on a narrow peninsula extending from Bramhall Hill on the west to Munjoy Hill on the east, it commands a variety of scenery of which few cities of the country can boast. Within the limits of the old town are two promenades, one of which overlooks the countryside and the other the water. The Eastern Promenade, on the brow of Munjoy Hill, is a magnificent park and driveway overlooking beautiful Casco Bay. At the foot of the hill lie the docks and the new State Pier. Beyond is the harbor with its short straight channel to the sea, where the largest liners may enter safely and quickly to a protected anchorage in the upper bay. And further to the east, the numerous islands dot the blue waters from Portland Head to Harpswell, twenty miles away. And in the foreground old Forts Gorges and Scammel of Civil War times lend a charm and picturesqueness to the scene.

On the other hand, as one drives along the broad avenue on the Western Promenade, an entirely different view is met. Here the eye roams across Fore River toward the foothills of western Maine and of New Hampshire. Several towns and villages are in view; and far to the north, on a clear day, the lofty range of the White Mountains is clearly visible, its summits often clad in snowy white. And it was here, on this beautiful parkway, that the citizens erected a bronze statue of their fellow townsman, Thomas B. Reed.

As one drives across the city from one promenade to the other, many points of interest may be seen. At the corner of State, Pine and Congress Streets is Longfellow Square, with the Franklin Simmons statue of the beloved poet. Seated in his armchair, among his books, he looks down upon the passing throng as if he were saying,

"Strange to me now are the forms I meet
When I visit the dear old town;
But the native air is pure and sweet
And the trees that o'ershadow each
well-known street,
As they balance up and down,
Are singing the beautiful song,
Are sighing and whispering still:
A boy's will is the wind's will
And the thoughts of youth are
long, long thoughts."

A short distance farther along Congress Street is Monument Square, the center of the business-district. Here stands the Wadsworth-Longfellow mansion, known the world over as the home of the poet. Although Longfellow was born in a house which is still standing at the corner of Fore and Hancock Streets and preserved by an association as his birthplace, nevertheless the Longfellow House in Monument Square is more closely associated with the poet. This is a brick building which stands slightly back from

PORTLAND HARBOR S. S. SKOLFIELD

PORTLAND CAMERA CLUB

the street and is preserved in its original condition. It was built by General Peleg Wadsworth in 1785–86. It was the home of Lieutenant Henry Wadsworth, the birthplace of Commander Alexander Wadsworth and the home of Stephen Longfellow and Henry Wadsworth Longfellow. In the summer-time, it is open to the public and is visited by people from all over the world who are interested in the many souvenirs of the poet which are contained in its rooms.

As one climbs the gentle slope of Munjoy Hill, he passes the Old Eastern Cemetery where many of Portland's early citizens are buried. Parson Smith, the great divine, Commodore Preble and many others whose names are closely linked with the early history of Portland have their last resting-place in this cemetery. The old gravestones of slate, ornamented with winged heads or skulls and funeral-urns and with the long, quaint inscriptions, are very interesting to those who are historically inclined. It was in this cemetery that the two naval heroes of the sea-fight off the coast of Portland were buried together in 1813—William Burroughs of the U.S. Brig, Enterprise, and Samuel Blythe of His Majesty's Brig, Boxer.

Near the top of the Hill on Congress Street still stands the old Observatory which was built in 1807 to signal the approach of ships, and from the top of which a wonderful view of the city may be obtained. At the junction of Congress Street and the Eastern Promenade a monument has been erected to the memory of George Cleeves and Richard Tucker, commonly known as the founders of Portland. And it was on this hill that many notable events took place in the history of the city. In 1690 Lieutenant Thaddeus Clark and thirteen men were ambushed and shot by Indians; in 1717 Lieutenant Governor Dummer made a treaty with the Indians and in 1775 Colonel Thompson of Brunswick seized Captain Mowatt of the English navy, for which insult the latter returned with a fleet of warships and burned the town.

The first settlement of Portland, then known as Casco, was made in 1633 by Cleeves and Tucker. They were really squatters at the time when they first took up their abode, a little east of Hancock Street; but in 1637 Cleeves obtained a grant of the peninsula and certain of the neighboring islands from Sir Ferdinando Gorges, the proprietor of that part of Maine. Gradually a few people joined these early settlers and devoted themselves to hunting and fishing and trading with the Indians. An impenetrable forest lay behind them and the only way to reach Boston, and the settlements to the west, was by travel along the beaches.

"I remember the black wharves and the ships,
And the sea-tides flowing in."

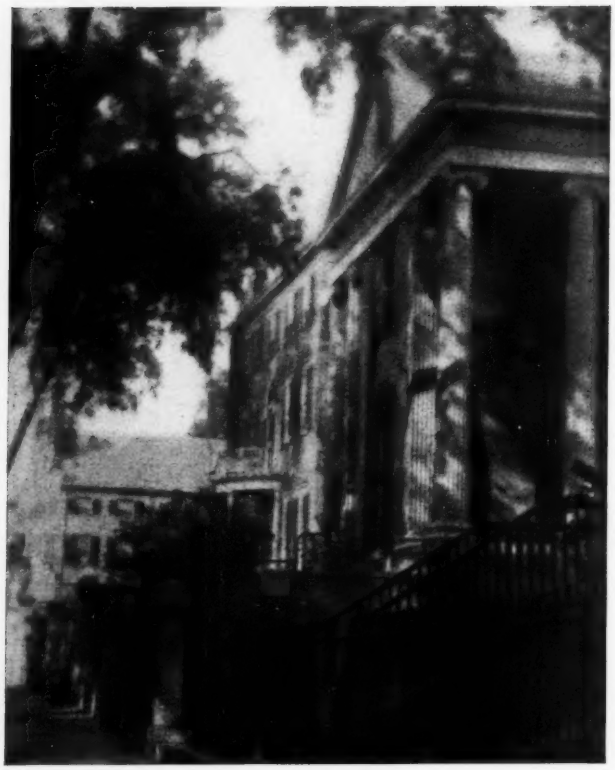
E. ROY MONROE

PORTLAND CAMERA CLUB

In 1658 Massachusetts took over this territory and established the first government, and it became known as the town of Falmouth, its territory extending over what is now known as Cape Elizabeth, South Portland, Deering, Westbrook and Falmouth. Trouble with the Indians occurred in 1676. King Philip attacked and destroyed the settlement and it remained deserted until 1678, when the inhabitants returned and built a fort at the foot of what is now India Street, known as Fort Loyal. This fort was destroyed about twelve years later in an attack by French and Indians.

The period from 1678 to 1775 was retarded by frequent wars; and, finally, with the opening of the Revolution, came the burning of the town by Captain Henry Mowatt, about four hundred buildings in all being destroyed. But, as before, the city rose from its ashes and in 1786 the peninsula on which the first settlement was made, and which was known as Casco Neck, was divided from the rest and became the town of Portland. The population increased rapidly and many of the inhabitants became wealthy. Fine houses were erected, among them being the old mansion now standing on the corner of High and Spring Streets, long the residence of General Wingate and later the home of L. D. M. Sweat, a former Representative to Congress. This old Colonial house is now the home of the Portland Society of Art; and, in connection with a new building—a charm of architectural design—is maintained as the L. D. M. Sweat Memorial Art Museum, a gift under the will of Mrs. Sweat.

In 1807 a period of depression followed, due principally to the embargo, and commerce was suspended and shipping nearly destroyed. But after the war of 1812 the town began to grow

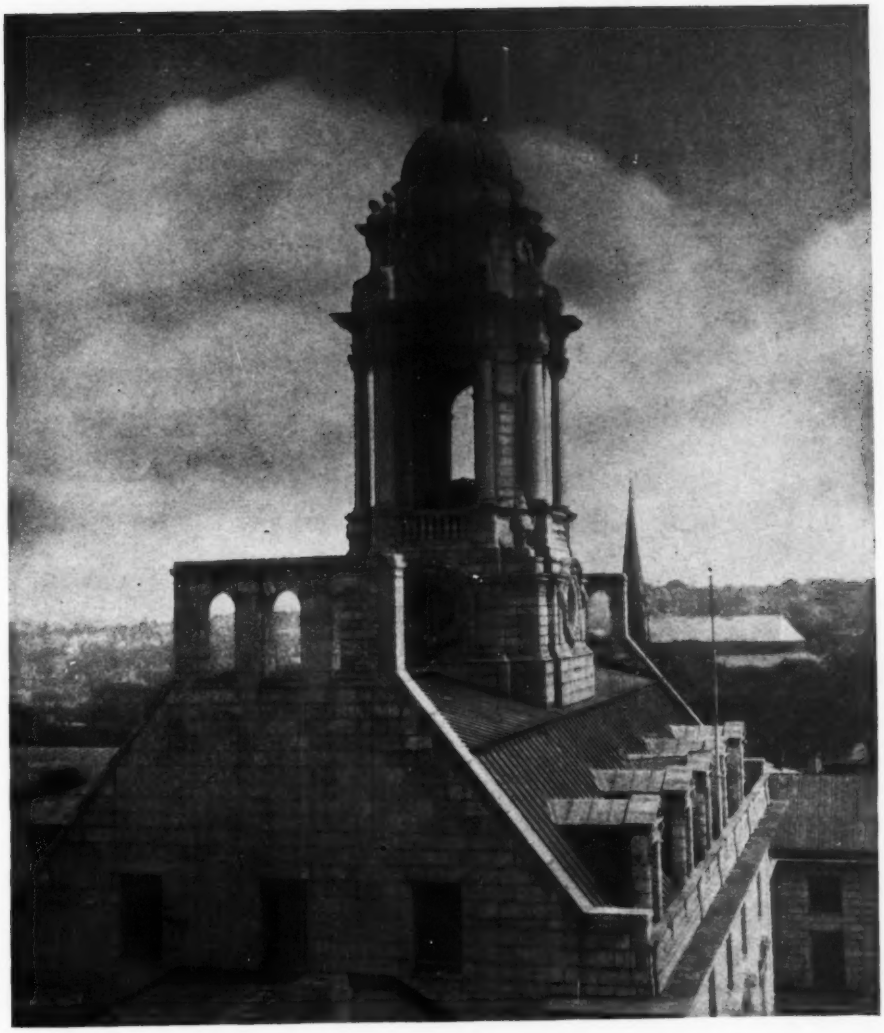


PORTLAND SOCIETY OF ART — FLOYD GRANT
PORTLAND CAMERA CLUB

slowly and in 1820 Maine was separated from Massachusetts and became a State. Portland was made its capital, which distinction it held until the removal of the seat of government to Augusta in 1832. The town was then granted a city charter. In 1823 steamboat lines were opened between Portland and Boston. Railroads were built, but not until the Grand Trunk Railroad was completed in 1853 were they of much benefit to the city. This line to Canada opened up a connection with the towns and cities of Canada and the great region of the Northwest. Portland became the winter-port of Canada and it resulted in a great increase in export-trade and the development of a larger waterfront on Commercial Street. The building of the Maine Central Railroad gave trade connection with the rest of the State and manufacturing-plants began to be erected. Today the port of Portland is recognised as having unlimited possibilities. With a fine, protected harbor of easy and safe access in the worst of weather and with a large pier erected by the State for the use of maritime and coastwise commerce, Portland has taken its place among the great Atlantic seaports.

Like most cities of the United States, Portland has suffered from fire. In 1866, on Fourth of July day, a great conflagration swept across the old part of the city, laying fifteen hundred buildings in ashes, and Munjoy Hill became a village of tents for ten thousand homeless people. But courage and perseverance brought about reconstruction, and the city was rebuilt, better than before.

Modern Portland is a combination of the old and the new. Many residences, churches and public buildings in the central and western parts of the city were spared from the great fire. The First Parish Church, built in 1825 and



PORTLAND CITY HALL
DR. RUPERT S. LOVEJOY
PORTLAND CAMERA CLUB

"So to the city, but with the flame
Of the pitiless sun, the east wind came.
It came from the heaving breast of the deep,
Silent as dreams are, and sudden as sleep."

ALFRED BRINKLER

PORTLAND CAMERA CLUB

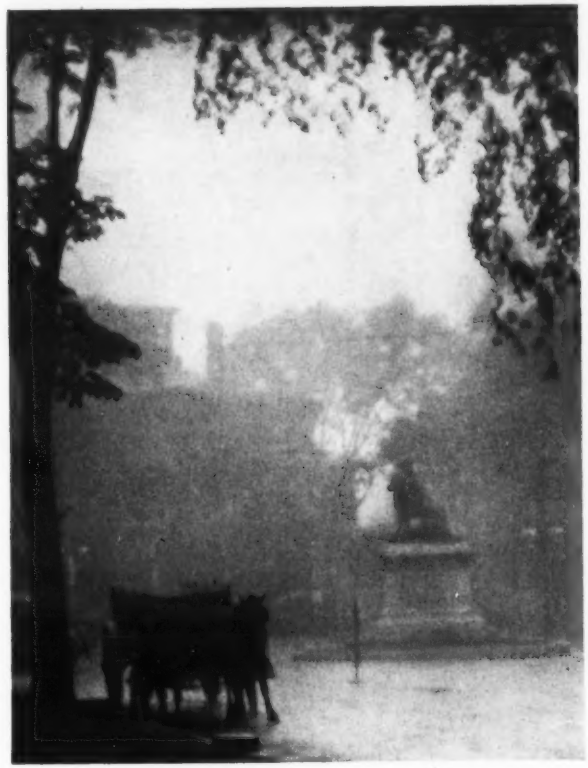
situated on Congress Street at the head of Temple Street, is one of the older churches of the city. Built of white undressed granite, it stands a fine monument of the earlier times.

A little to the east of this edifice are some of the modern public buildings. The new City Hall, built of white granite, with its lofty clock-tower, its magnificent wings and forecourt, is perhaps the finest example of the municipal architecture. Patterned after Independence Hall, it combines the traditions of the old city and the prosperity of the new. Its attractive auditorium contains one of the finest municipal organs in the country. Grouped around Lincoln Park, a breathing space in the heart of the city, set off directly after the fire, are the Federal and County Court Houses, stately and commodious. These in connection with the City Hall form a civic center created by the foresight and initiative of the citizens of Portland.

Notable among the modern structures are the Fidelity Building, the Masonic Building and the Portland High School. And recently the new Portland Bridge has been completed, connecting the cities of Portland and South Portland. In the western part of the city are two large hospitals, the Maine General, on the Western Promenade, and the Eye and Ear Infirmary near by on Congress Street. On the opposite side of the city is the Marine Hospital at East Deering.

At the present time, several large buildings are in process of erection. The new Deering High School is being completed and a new office building is planned on the site of the old Clapp Mansion in Monument Square. *The Press Herald*, one of the newspapers of the city, is building a new home at the corner of Exchange and Federal Streets and it is understood that the old Preble House, next to the Longfellow Mansion, is to be replaced by a modern structure.

As the older part of the city has become settled, there has been an expansion toward the north,



PORTLAND CAMERA CLUB

EXCHANGE STREET AND CITY HALL J. LUDGER RAINVILLE

LONGFELLOW SQUARE DR. RUPERT S. LOVEJOY

and Deering has been annexed. This has naturally become the residential section, and many fine homes have been built. Forest Avenue, a broad street containing many large mercantile establishments, connects the older city with the new, and makes an easy approach to the central business-section.

The illustrations which accompany this article

MAIN ENTRANCE, PORTLAND CITY HALL HENRY A. PEABODY
PORTLAND CAMERA CLUB

are from photographs made by the Portland Camera Club, Photographic Section of the Portland Society of Art. It may be of interest, therefore, to say a few words about this club and its workers. The Portland Camera Club is not a new organization. It has been in existence for some twenty-five years, either as a separate club or as a section of the Portland Society of Art. It is comfortably housed on the third floor of the Sweat Memorial Art Museum, where it has a complete studio and darkroom. It shares a large assembly-room with other members of the Art Society. It also has the benefit of a very complete collection of photographic and art-magazines and a small but very good library of photographic books.

The club has sought first to interest its members in the technical side of photography in order that they may be able to do their own photographic work. Then it encourages the use of the advanced processes with the view of stimulating original artistic expression. In addition to this, the Portland Society of Art holds a photographic exhibition during the month of March in each year, which is open to all pictorial photographers. That the club has succeeded in no small way is evidenced by a mention of some of the members whose work is seen in most of the photographic exhibitions. Mr. Francis Orville Libby, a Fellow of the Royal Photographic Society of Great

SIDE ENTRANCE, PORTLAND HIGH SCHOOL FRANCIS O. LIBBY
PORTLAND CAMERA CLUB

Britain and a member of the Pittsburg and Los Angeles Salons, is a frequent contributor to the exhibitions in this country and England. He works almost entirely in gum by means of paper-negatives and uses a Graflex camera with a Struss lens and an Icarette A with Carl Zeiss lens.

Dr. Rupert S. Lovejoy is well known through his contributions to all the principal exhibitions in the United States, and the London and Royal Photographic Salons. At a recent photographic competition and exhibition at Kansas City, he won first prize in a total of more than eight hundred accepted prints. He is, like Mr. Libby, a member of the Pittsburg and Los Angeles Salons, and uses the same processes and camera-equipment. Both Mr. Libby and Dr. Lovejoy have been represented at Toronto and Copenhagen and were among American exhibitors to be invited to participate in the Scottish Salon, in itself no small honor.

Mr. Alfred Brinkler, the President of the Club, has exhibited at London and in Pittsburg and Los Angeles and at other exhibitions in this country. His favorite process is gum and he uses at the present time an Icarette A with Carl Zeiss lens.

Among others who have exhibited in the leading salons are J. Ludger Rainville, Mortimer N. Bremon, William B. Bradford, Roger Paul Jordan and Harold Ayer. Mr. Rainville uses a Graflex with Verito lens and works in bromide, and Mr. Ayer uses the same equipment and works in both bromide and gum. The work of Mr. Bremon is mostly in gum, and Mr. Bradford uses carbon and bromide. Roger Paul Jordan is one of Portland's best portrait-photographers. These men, on account of the wide recognition of their work, are perhaps the leading pictorialists of the club. In the 1921 London Salon they had more prints accepted than any

group of men from a photographic center in the United States except Los Angeles.

Portland has others, like E. Roy Monroe, George S. Beach, Fred C. Hall, C. M. Jaquith and Floyd Grant whose work is frequently seen in the Portland exhibition, and in other places. Mr. Monroe is an authority on photographic processes and is now Association Print Director of the Associated Camera Clubs of America, the print interchange being at the present time under the management of the Portland (Maine) Camera Club.

Nearly all the pictorialists in Portland use small and efficient cameras, having discarded the larger sizes, preferring to obtain the artistic effects by enlargement. Of course, soft-focus lenses require reflecting-cameras, and the 3¼ x 4¼ Revolving-Back Graflex is the one commonly used for this purpose. However, most of the members carry cameras of still smaller sizes, the lens-equipment being anastigmats of the speed of F/6.3, or faster. Perhaps one reason for this is that the club makes an annual pilgrimage to the White Mountains of New Hampshire where large cameras are more of a burden than a necessity.

The members whose photographs have been selected to interpret Portland to the readers of PHOTO-ERA MAGAZINE believe in their city, its natural beauty and its architecture. To each a different phase of the city's life appeals. Some are attracted by the harbor and the waterfront and the big liners loading for foreign ports; some by the busy streets and parks; and others still by the buildings of the present and the monuments of long ago. Taken together, these pictures represent the Portland of today; but with a touch here and there of the city of the past, for Portland's charm lies not only in its natural scenery, but in its historic associations—a true New England city.

"And Deering's Woods are fresh and fair,
And with joy that is almost pain
My heart goes back to wander there,
And among the dreams of the days that were
I find my lost youth again."

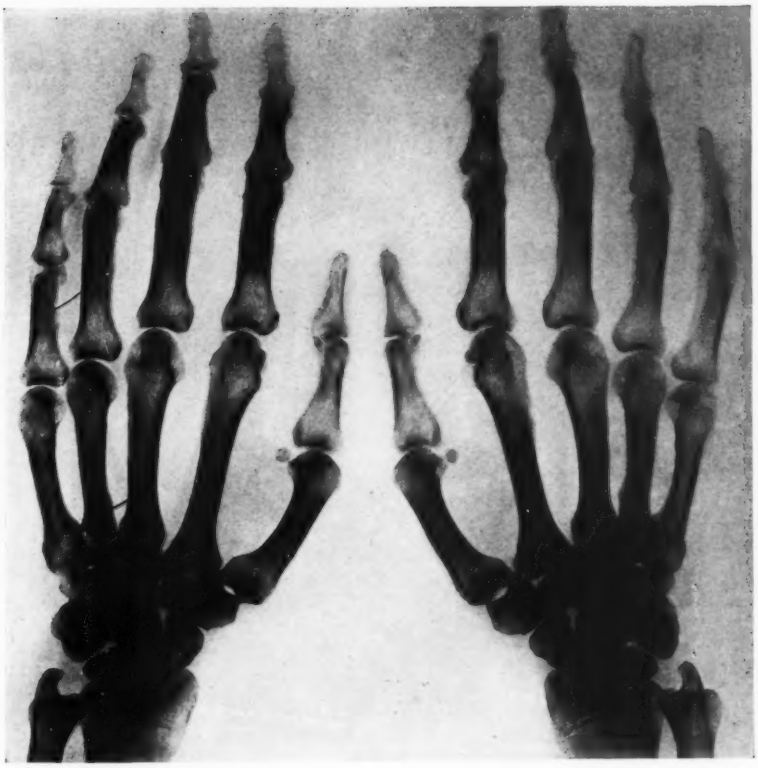
Making Pictures in Total Darkness

R. L. EDMONSON

THE above statement will probably cause the reader to doubt the veracity of the writer. There is no denying the fact that, at first glance, it seems preposterous, if not altogether impossible. Nevertheless, thousands of pictures are made daily, some of them in total darkness, with absolutely not a vestige of light to be seen. Very hard to believe, is it not? It is true, nevertheless. If, after reading this article, the reader is not convinced that such is the case, I stand ready to be corrected. However, I will grant that the opening title is a catch-phrase, because we all know that light must act on the emulsion of a plate before a picture can be made; but, as stated before, these pictures are made, and no light is visible during their exposure. There is light; but it is invisible. This, too, will probably cause the reader to wonder. How can there be light, and it not be visible? The answer to that question is the theme of this article.

The light I have reference to is the most powerfully actinic to which a plate may be subjected. It is invisible, it is cold: and, yet, it will burn. Does this further mystify the reader? In order to carry out the mystery still further let me add that this light has the power to act on a photographic plate or film, even though it is placed within a wooden box or one made of aluminum. The light-rays may act on this plate right before the eyes, and one not be aware of the fact. By this time the reader will have guessed that this light, which I have surrounded with such mysterious power, is the X-ray. So the X-rays, or more properly speaking, the Roentgen-rays, will form the subject of this article. The express purpose, then, will be to outline briefly the strides that have been made in this most wonderful branch of photography. The discovery of the X-rays by Prof. Wm. Conrad Roentgen, on that memorable day in 1895, startled the world. And his announcement "that he could make pictures of the human bones" was startling, to say the least. To the layman the X-rays seem to be very mysterious, and even to those of us who understand their action and effect they seem wonderful. In this article I will not delve deeply into the intricate apparatus or technique employed; but, in passing, will mention a few facts that may be of some assistance to the photographer.

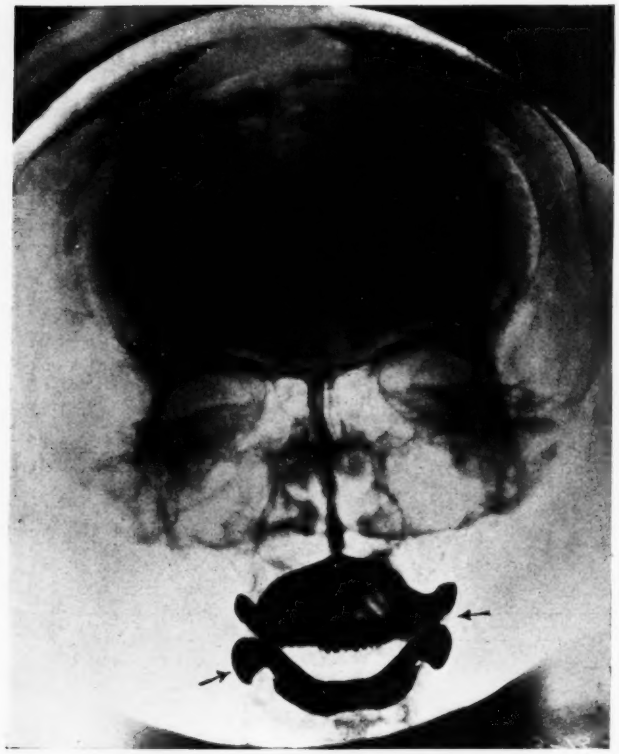
Since the discovery of X-rays, many changes have been made in the mechanical parts; but the photographic aspects remain the same today as they were on the day of their discovery. Let me illustrate. First, let us consider the X-rays as a



NORMAL HANDS R. L. EDMONSON

source of light. They are the result of phenomena which take place in any region where electrical impulses (electrons) are stopped suddenly in their flight, within a glass-tube of a certain degree of vacuum. They are invisible because they come within the region of the spectrum known as the tri-ultra-violet region. Let us stop, for a moment, to consider the spectrum. The last visible color of the spectrum is the ultra-violet, with a computed wave-length of .38 of a micron; the tri-ultra-violet has a wave-length of .014 of a micron. (The appellation "tri-ultra" literally means removed beyond vision three times.) The other extreme is the tri-ultra-red ray, or the Hertzian wave, better known as the wireless-wave. Today both these waves play a most important part in every-day life. What wonders are not attributed to them! The taking from out of the very air the news of the day! Wonderful, is it not? But even more wonderful yet are the X-rays, because they possess power to pass through any substance—wood, metal, anything. They are prevented from passing, and fogging plates and films within the laboratory, only when such material is placed within a thick, lead-lined box. X-rays pass through an object according to the atomic weight of that object; and lead, which possesses a very high atomic weight, prevents their passage only when the thickness is sufficient to do so.

X-rays are demonstrated in two ways, to wit: by their action on a photographic plate and their action on certain chemicals, such, for instance, as barium platinocyanide. It was this action on the barium platinocyanide that led up to the discovery of the fluoroscopic screen by Professor Roentgen; and this same screen, with some improvements and modifications, is the "fluoroscopic screen" used today. When such screens are placed in the path of X-rays, they glow somewhat similarly to a parlor-match glow when the phosphorous is wetted with the finger and



HUMAN SKULL R. L. EDMONSON

ARROWS SHOW ARTIFICIAL DENTITION

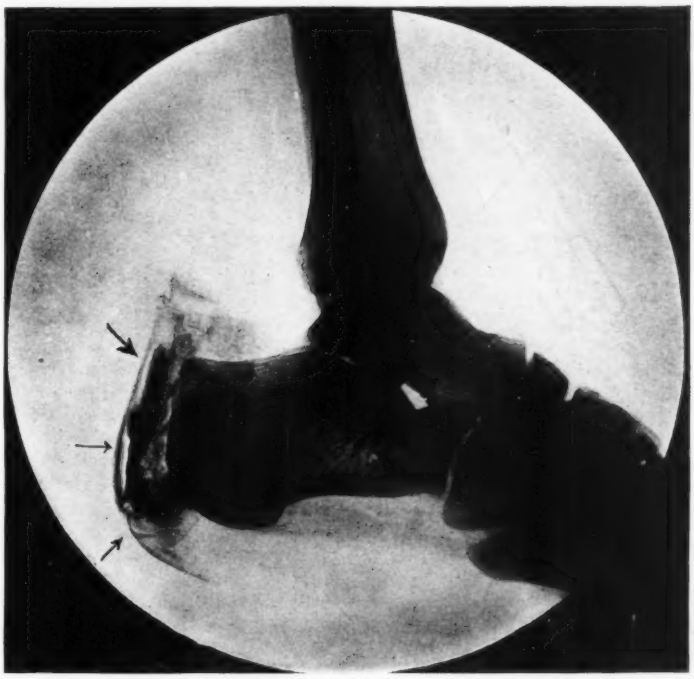
then rubbed gently between the fingers. By this property of the screen the exposure for a Roentgenogram (X-ray picture) is cut down to a very small fraction of a second, because the screen has a "lag" and glows even after the source of the X-rays has been discontinued. Also, this type of screen is used to visualise the organs of the body and their action. The patient is placed behind the screen, the X-ray tube is excited, and the shadow of the parts to be viewed is projected upon the screen. In this manner the heart, lungs, stomach, and other organs can be studied while normally functioning. True, certain liquids are given the patient, which contain salts of a metallic base (like Bismuth Salts, for instance) and which obstruct the passage of some of the rays and, as a consequence, cause the shadows to appear.

Not only does the medical profession find use for the X-rays, but they are used to a large extent in industrial enterprises, and they are daily becoming almost indispensable in some manufacturing-plants. During the late war, the X-ray came into more prominence than before, due to the many new ways in which it was brought into use. The examination of airplane propeller-blades by the aid of the X-rays is too well known to discuss; but that they use them to examine metal mechanical parts is not so well known; and, in addition to this, they are also used in European custom houses to examine trunks and hand-baggage for contraband articles. In fact, the X-rays find as many uses as there are industries; and in each case, once tried, they are used permanently.

Of late, stereoscopic Roentgenology (stereoscopic X-rays) plates have become very popular, as well as useful. These plates are made somewhat similarly to ordinary stereoscopic pictures; but, in the case of the X-rays, the "tube" is shifted one and a quarter inches from its center, and when the plates are developed they are

looked at in a special stereoscopic viewing-box (Wheatstone viewing-box). The plates are placed in these boxes, with illumination behind them, and the pictures are viewed in mirrors, arranged at proper angles to bring out the third dimension. These plates are very valuable for the localising of foreign bodies, such, for instance, as bullets, developed, just as ordinary photographic plates are developed. However, in this case, the plate is developed for extreme contrast, rather than for printing-qualities.

X-ray plates require special developer, and this differs from the other developer, in that it contains more Elon or metol, also more



ANKLE-JOINT R. L. EDMONSON

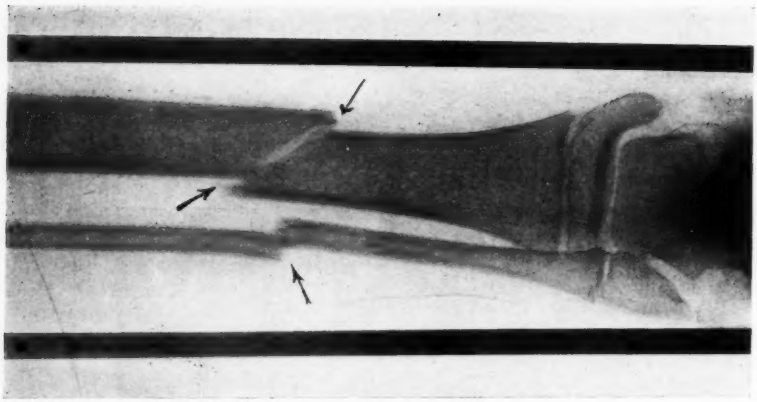
ARROWS POINT TO ZINC OXIDE IN BANDAGE

or pieces of shrapnel, as was demonstrated during the World War.

A few words with regard to the manipulation of the plates may be of some value in this article, because very frequently the photographer is called upon to develop such plates. As they differ somewhat from the ordinary photographic plate, it is well to become somewhat familiar with the technique employed by the laboratories which specialise in this work. The X-ray plate is placed within a black envelope; this, in turn, is then slipped into a dark orange envelope; the exposure is made with the plate placed beneath the part that is to be photographed, after which it is taken to the darkroom and hydroquinone, a different proportion of both sodium carbonate and sodium sulphite, so that it will be readily seen that the developer must be made according to some reliable formula, such as the following:

Water	20 ounces
Elon	20 grains
Sod. Sulphite	1 ounce
Hydroquinone	80 grains
Sod. Carbonate	1 ounce
Potas. Bromide	8 grains

If the plate has been exposed properly, this formula will develop at 65 degrees F. in 5 minutes and in 4 minutes at a temperature of 70 deg. Double-coated films are films with emulsion-



FRACTURE OF BOTH BONES OF LEG R. L. EDMONSON

coating on both sides. They require much less exposure, and the development must be watched carefully, because the image "comes up" on both sides at once. A good thing to remember is to develop an X-ray plate until it is quite dark when held before the ruby light, or until the image is seen distinctly on the glass-side. Chemical fog is sure to result in plates developed longer than 8 minutes, or if transferred into solutions either too cold or hot. After the development is complete, the plate is placed in the hypo-bath and left until clear, then removed and washed about one half hour. After a thorough washing, it is dried in the rack.

In conclusion, I should like to state that although in the early days the X-rays' burn was considered one of the unavoidable disadvantages of their use, since then we have found out that they burn only when not properly handled. At the present time, one would have to look very carefully to find a single case. This is due to the fact that the X-rays are "filtered" before they strike the person. The part of the rays that was injurious—although not altogether overcome—has become of such minor importance that one need no longer be afraid to be exposed to the rays for the time that is required to examine the entire body. This, I think, should be mentioned, because many persons feel reluctant to undergo such examinations. Really, there is no reason whatever to be afraid.

After the Negative is Made

IT has been said, with a great amount of truth, that when a satisfactory negative has been obtained, only the half-way stage to the finished picture has been reached. This is, unfortunately, not understood by a very large proportion of fairly skilful photographers, who seem to imagine that all that remains to be done at this stage is to make a print which fairly reproduces the gradations of the negative, and is of a color which is agreeable to the producer. If it were possible to inspect the original negatives of most exhibited photographs, particularly those of landscape-subjects, it would be found that "straight prints" were rare; some means of improving their pictorial quality is used in nearly all cases.

Putting aside all matters concerning the modification or "faking" of the negative, it is interesting to consider what may be done to produce a "picture" from a commonplace exposure. Perhaps the most useful tool for this purpose is the trimming knife. It takes some training and much experience to include no more within the limits of the plate than is necessary for picture-making, but with a print before one it is easy to mask down until a satisfactory composition is found, that is to say, if the necessary material is present. It will sometimes happen that two or even three satisfactory pictures may

be evolved from one rather overcrowded plate, as witness the exploits of a well-known "birch-and-bracken" artist, who gave away his methods in an illustrated article many years ago.

It will be found, almost without exception, that the selected portions are too small to make effective pictures, and that enlargement becomes necessary; but, provided that the apparatus is at hand, this is rather an advantage than otherwise, as it gives full scope for local shading, which may be done to such an extent that the effect of the finished print is quite different from that existing at the time of exposure. It is possible to deepen shadows or to lower lights to almost any extent. At this stage there is also the opportunity to control the definition, which may be done either by using a suitable lens or employing some such device as chiffon, bolting-silk or a diffusing-disc.

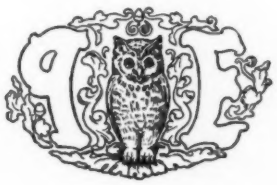
Next in importance come the question of the color of the image and the surface of the paper. There is now a wide choice in this field. A considerable range of color between pure black and something approaching brown may be obtained by development alone, and by toning almost any shade of brown can be obtained by using the liver of sulphur, sulphide or hypo-alum process. If these do not suffice, the Carbro process gives an almost unlimited range, allowing those whose fancy runs that way to print forest-scenes in green and marine-studies in blue. However, such colors must be used with rare discretion if the maker of the print aspires to exhibition-honors.

Many faulty compositions may be improved by the addition of suitable clouds, easily done in enlarging, even to the extent of turning a horizontal picture into a vertical one by judicious combination. Akin to this is the practice of modifying the background in portraiture by making a negative with black-lead upon ground-glass, stumping-on such vague indications of clouds or foliage as may be needed, and exposing in contact with the figure-negative. This, of course, can be done only when the background is virtually transparent or very nearly so.

Bromoil provides almost unlimited scope for the pictorial worker, as it affords more facilities for suppressing unwanted details than perhaps any other process. It is, for example, easy to take a harsh black-and-white original and to convert it into what appears to be a mezzotint printed in deep brown ink. Many are deterred from attempting Bromoil on account of fancied uncertainties, when, as a matter of fact, there is little uncertainty if very elementary precautions are taken. The most important of these is the selection of a suitable paper. It is quite wrong to imagine that any bromide print can be converted into a Bromoil; for it often happens that the gelatine is already hardened and consequently will take the pigment all over the surface. Several manufacturers issue special Bromoil papers, and until considerable experience has been obtained it is wise to use these, although many ordinary brands of bromide paper are very suitable. It may be remarked that the size of grain in the Bromoil print is controllable to a very large extent, and in portraiture a very pleasing effect may often be obtained by using a fine grain for the flesh and a coarser one for the draperies and background.

Although not purely a photographic process, and consequently not admissible in exhibition-work, monochrome finishing in oil-colors will give results which are often mistaken for Bromoils. In this method a thin film of oil-pigment, made by mixing black with red, or blue to obtain warmer or cooler shades, together with a thin megilp-like medium, is rubbed all over the print with cotton; the highlights and halftones are lightened by wiping off the color with soft rags, and additional color added to the shadows, if required. This method of finishing is very suitable for copies of old photographs, since the very obtrusive grain becomes almost invisible at the cost of very little labor. Landscapes may be modified to any extent, clouds being added in a few minutes by anyone who has a knowledge of cloud-forms and some slight skill in handling the brush.

The British Journal.



MALLARD BEAUTIES H. T. MIDDLETON

An Idyl of the Rancocas Marshes

HOWARD TAYLOR MIDDLETON

THROUGH Southern New Jersey flows the tranquil Rancocas, the brownest, the crookedest, and the sweetest little stream in all the world. Stained dark with a trillion cedar-roots from the barrens, in the heart of which it was born, it winds its lazy way across the countryside until it merges with the stately Delaware. In the bordering marshes, tall reeds wave their green blades in the Springtime, ripen to corn-yellow in the torrid heat of Summer, and turn to russet-brown at the touch of Jack Frost's icy fingers when Autumn comes.

It is here that many of my wild friends have their dwelling-place beneath sun-kissed skies, and I am inviting you today to a seat in the bow of my canoe. Camera in hand, you shall drift with me among the watery labyrinths that twist and turn through my beloved meadows, that you too may find and photograph these friends of the wilderness.

"What camera for nature-work?" you ask me. A 4 x 5 Revolving-Back Auto Graflex fitted with a 6½ x 8½ Bausch & Lomb Tessar Lens, Series Ic, F/4.5, and using *Super Speed* Kodak Cut Film, is the outfit *de luxe*, I promise you.

Let us seek first the sheltered cove at the point where the nature lover's house-boat rides at anchor. We are sure to sight a pair of mallard beauties as they quack and paddle drowsily beside a moss-grown log. Here they have been since the driving sleet of a dreary December early morn, when they stopped to rest and feed among the domestic water-fowl in front of the house-boat door. Timid, at first, they soon grew trustful; and, finding the larder greatly to their liking, declared the splendid sanctuary a permanent abode. It will be easy, if we proceed with caution, to float sufficiently near for pictures, and not only will it prove a keen delight to photograph these majestic creatures at close range, but to realise that it is hospitality extended by man to the wild that makes such intimate nature-portraiture a possibility.

Mallard Drake and his lovely consort have courted, wed, and raised a brood in this quiet retreat without molestation from enemies, furred, feathered, or human; and the last, I fear, are worst of all; therefore, they are quite unafraid. Have your camera at "the ready," for we are very near. "Thud!" sounds the shutter, and the mallards are ours. Even now they do not take wing, but continue to watch us in idle curiosity.

A sweep of the paddle sends us gliding around

GREEN WING, THE HERON
CATBIRD AND YOUNG
H. T. MIDDLETON

a bend, and then, floating noiselessly onward, we come upon Green Wing, the heron, skulking among the reeds. Close, and yet closer still, and his image grows distinct in the camera-mirror. The exposure is made, and at the attendant noise Green Wing voices his opinion of poaching photographers by an indignant "Quaw-w-wk!" while flapping heavily away o'er the marsh.

Here's a piece of news: I know of a catbird-slate-gray coat visits her offspring, feast in beak, and minding not at all the camera focused upon her. With the pulling of the thread, we add another trophy to our bag of nature-studies.

Searching further, close by the home of the catbirds, in a hummock at the foot of a wild apple-tree, we find three young song-sparrows ripe for portraiture. Once again the camera is erected, and a feeding-scene is portrayed. Retreating

SONG-SPARROWS H. T. MIDDLETON

home hidden deep in the briery seclusion of a blackberry tangle. In it we should find four fully-feathered fledglings ready for their initial lesson in aviation. They were there yesterday, I know. What say you, shall we beach the canoe, work our way through an intervening elder thicket, at the meadow's rim, and pay the catbirds a visit?

You'll be glad to?

Fine! Let us be on our way then.

Here is the nest; but instead of four young birds, we see but one; we have arrived a heart-beat too late. Are we disappointed? Of course. Daunted? No, indeed! We will make a picture of Mother feeding her remaining baby, and be thankful that home-ties are not *entirely* broken.

Catbird Junior is lifted gently from his hair-lined cup, and placed upon an elder spray. Next a stake is driven into the earth, and the camera clamped upon it. Then a thread is run from the shutter-release lever to our ambush twenty yards away. Very soon Milady of the through the thicket on the trail by which we came, an explosion occurs almost in our startled faces, as a quail breaks cover at our right hand. Mrs. Bob White "sat tight" when first we passed; but our second appearance so near her brooding-place within so short a time is too much for her high-strung nerves, and she "flushes" in wild alarm. We mark well the spot from which the feathered bombshell rose, and will return later for the chance to photograph her upon her nest. Oh yes, the nest is there, and, what is more, there are thirteen pure-white eggs inside. Is the number thirteen unlucky? Wait and you shall hear how it turned out.

Across the marsh, along the face of an abrupt, sandy cliff, our eyes glimpse a pattern of black dots which might, for the sake of comparison, be likened to the apertures in the top of a pepper-shaker. This collection of holes we recognise as a huge apartment-house in which bank-swallows dwell. Among the smaller holes, there occasionally occur very much larger ones. In

SNOW WING FISHING
SNOW WING IN FLIGHT
H. T. MIDDLETON

FOUL MURDER HAS BEEN DONE H. T. MIDDLETON

these, the Izaak Waltons of bird-land, the belted kingfishers raise their young. As kingfisher-babies are ever so cunning, suppose we investigate the cliff in the hope of annexing their images to our collection. We will select a likely looking hole near the summit of the bank as a place in which to hunt for a kingfisher-family. The entrance to the five-foot tunnel shows every indication of having been used recently, and the odor emanating from its mouth is fishy, to say the least. In response to the emphatic stamping of our feet upon the cliff-top, the mother darts out at her front door, sounding her rattle angrily as she goes. Her flight is straight and glancing as she skims along the river-front—an azure streak; then suddenly remembering that she has a household to support, she sweeps in a long arc to midstream, where she hovers above the water for a moment. Seeing her prey beneath the surface, she dives downward in a spiral plunge. There follows a miniature upheaval of creamy spray, and the bird is en route to a dead tree, perch-laden. Arriving, she whacks her quarry soundly against a limb, killing it, then waits impatiently for troublesome photographers to cease their intrusions upon her nursery. "Digging in" with a canoe paddle, at the back of the tunnel, we discover no less than six young kingfishers, and there follows a deal of fun—yes, and a lesson in patience, too—e'er the youthful sextette are posed in sober row upon an old timber above their home.

Now back to our canoe, and along a running brook to where Snow Wing, the egret, spears minnows for his dinner. Have no fear that the white stranger will fly at our approach; we are old acquaintances by now. We have known each other for many weeks, have Snow Wing and

YOUNG KINGFISHERS H. T. MIDDLETON

FLYING EGRET H. T. MIDDLETON

I, and he has learned to have confidence in man. Paddling gently toward him, we can but marvel at his slim grace, and at his elegance accentuated by the shimmer of noonlight on his silken coat. At easy camera-range a picture is made of Snow Wing at his angling, and, coming close, still another as he "takes off" for a different fishing-ground farther down the marsh.

Lest we forget a promised engagement, a distant, mellow whistling call reminds us: "Bob White! Bob White! Bob White!" Faintly from the elders where broods a lady quail, it comes. Turning our way thither, again we approach the nest-site, but oh so carefully now, as we mean to get a picture without disturbing our subject, and this requires great strategy. The bird is not upon her nest because we can see the white eggs gleaming within their green circlet. A moment of suspense, with eyes upon the ground, and our hearts grow sick—it is tragedy we behold. Foul murder has been done since that whistling call came to us across the marsh. Before the threshold of his home, cold in death, lies the whistler, but traces of the lady bird we see none at all.

As I hold the limp, little body in my hand, gently stroking the ruffled plumage, my mind reaches out to that epic of the country-fields, from the inspired pen of Walter Greenough in *Farm Life*:

Little brown bird in the stubble,
Born to a life full of trouble.
Up and away!
Through the twelve-gauge's spray—
Ah, little bird, life's a bubble.

Naught but a fistful of feather,
You that belong to the heather,
Up—o'er the brush!
In another wild "flush"!
Brave little fistful of feather.

Run, little bird, in the clover—
Game little life, nearly over—
Steady there! Rise!
Dead bird! Oh what a prize!
Game little bird in the clover.

"Dead Bird! Oh what a prize!" When hunted by a true sportsman, who invariably gives the game a fighting chance—yes; but this ruthless killing in the elder thicket is distressingly different. Was a marauding hawk, caught red-clawed in the nefarious act of carrying off the hen, attacked by the dauntless cock, and did the male bird die fighting in defense of his beloved? Who can tell?

Those of us who tramp the wild-life trails are forever happening upon just such hideous situations as this one—grim reminders that the little

folk of the out-of-doors have their crimes and sorrows like the rest of us. In nature-land, more than in human land, perhaps, it is the strong against the weak, and only the fit survive.

Late afternoon and we are homeward bound. The declining sun throws a path of dancing, golden wavelets ahead of our canoe. The sky turns to amber—to amethyst—to purple, and, silhouetted against the grandeur of the west, swallows and night-hawks wheel. A belated crow hurries on sable wings to a nocturnal rendezvous with his fellows in the distant pine-tops; a little screech-owl quavers a plaintive summons to the dusk—and our day is done.

Summer Foliage-Effects

WILLIAM S. DAVIS

AS the flood-tide of summer sweeps over the landscape, the rich foliage-effects are a constant invitation to the worker who is possessed of artistic instinct to fare forth and to photograph bits which shall express the charms of the season; but, not infrequently, the very wealth of subject-matter renders judicious selection difficult and the essence of a scene eludes the grasp. To prevent the confusion resulting from indecisive treatment there is nothing like analysis of one's impressions. This clarifies the mental vision; and once the cause for a particular effect is found, its pictorial rendition becomes mainly a matter of technique. This by no means implies crushing one's spontaneous impressions, or imaginative instincts; but rather to translate these into definite form, since the fact cannot be overlooked that a camera when *used automatically* is only a machine, totally incapable of discrimination.

Standing before a plentiful array of material, the inexperienced worker more frequently than not includes too much in the composition. Open landscapes which cover miles of prospect have been rendered effectively; but to do so requires exceptionally skilful handling, for which reason the beginner will be well advised to let them alone and, instead, study *how much can be omitted* without destroying or weakening the impression. Doubtless, many will find to their amazement that a very limited amount of subject-matter, when rightly employed, usually expresses most vividly the essential character of a large mass of similar material. This is especially true when foliage is the dominant element, for much of the more subtle charm produced by pattern, texture and play of light among the leaves and branches is submerged when a superfluous amount is shown. Of course, there is no reason why trees should not be used simply as incidental spots or masses of tone in a composition; but then they cease to constitute the pictorial motive we are now considering.

Trees afford a most forceful means to suggest such varying impressions of summer as the coolness of deep shadows, warmth of sunshine in the open, morning-mist, the effects of a breeze, peacefulness of a still evening with the glow of the western sky intensified by the dark forms of trees standing up boldly against it, or the calmness of a pool which reflects the foliage that lines its grassy banks. Foliage also furnishes subject-matter well adapted to the needs of those who prefer to weave abstract patterns of decorative quality out of natural material.

In composing foliage-effects one must think mainly in terms of tonal masses, and aim to distribute these in agreeable space-relationship, one to another. Breaking up of the gradation into numberless minute spots of light and dark is very destructive to harmony; but is very likely to occur on bright days, if the scene is not lighted from a suitable angle. Foliage in the open often appears speckled with dots of light when the sun is high overhead or directly back of the spectator, owing to the smooth upper-sides of the leaves reflecting the strong illumination from the sky; but it is less noticeable when the observer is near enough to see only the underside of spreading branches.

The best angle of lighting, as being conducive to breadth, is a low one from one side, or back, of the subject, the first giving the greatest amount of gradation in the tones of foliage, whereas the latter causes it to stand out in very broad, flat areas; the pattern of sunshine and shadow in the foreground adding the touch of variety which prevents tonal monotony. "Summer-Shadows" illustrates a typical against-the-light effect when the sun is high enough to be outside the field of the lens. Still flatter dark, tonal masses are to be seen when the sun is very low; and, given a good sky, strikingly beautiful compositions may be produced by selecting a group of trees which show pleasingly diversified contours, using them in the middle-distance to emphasise the highlights in the sky, and retaining a moderate area

of open foreground, which might include a winding road, simple stretch of meadow, or the bank of a stream with the water reflecting the tones of sky and trees.

Although the direction from which the light comes determines, in any case, the distribution of light and shadow, the range and relationship of tone-values depend upon its intensity; clear strong sunshine produces the maximum degree of contrast, which is most difficult to render acceptably; and the softer quality, caused by the presence of haze in the air, or thin clouds, lowers the brilliancy of the lighter values and at the same time renders the deep shadows more luminous. In some instances, very charming effects are obtained when the subject is enveloped in thick fog, particularly when the atmosphere is suffused with sunlight. Such an atmospheric condition greatly emphasises the separation between planes, for which reason it can be made use of to accent some feature of importance in the foreground which at other times cannot be separated properly from a distracting background.

On a dull day the general effect will be monotonous in tone unless the individual parts of the subject possess a sufficient range of local gradation to offset the flatness of illumination; but when the sky is filled with broken cloud-forms, many dramatic combinations of light and dark are frequently observable. Many of the early landscape-painters of the Dutch and English schools were fond of representing such effects.

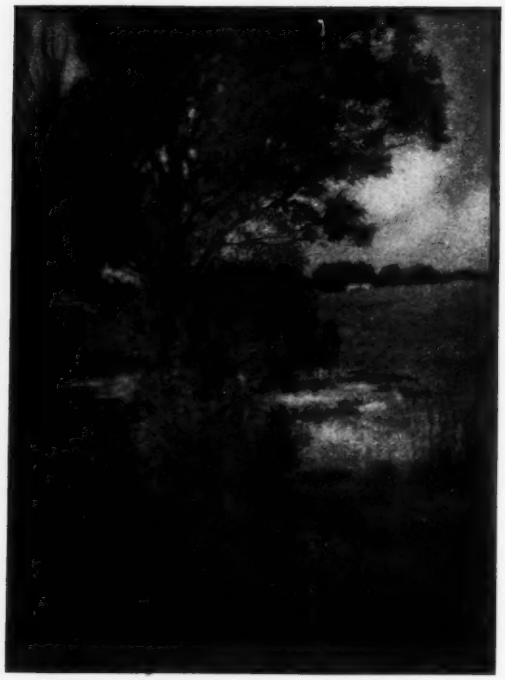
A very low angle of lighting is best avoided in forest-interiors unless one has a good reason for wishing to keep the lower part of the picture wholly in shadow. Another matter which may influence the amount of light the foreground receives is the slope of the land. Obviously, when working on the western side of a hill, the play of sunshine will last much longer than upon the opposite side, and on a steep northerly slope it may be necessary to expose while the sun is well overhead to show any sunlight in the foreground of your picture.

Although the general character of the leafage changes less throughout the summer than during the same length of time at any other season, the foliage of some trees is only at its best very early in the summer, the common willow being an example of those varieties which lose their freshness after the leaves have felt the heat of midsummer. Although this may not always show in a photograph of an open scene, it is very likely to make itself evident when single branches appear in the nearer planes of the picture. Fortunately for the worker who cannot always choose his time, there are many other trees which retain their freshness until well into the fall, this apparently being true of all the harder wooded species which take a longer time to arrive at a state of full foliage.

SUMMER-SHADOWS WILLIAM S. DAVIS

In composing a group of trees, or several separated specimens, there are two points about the space-arrangement which should be kept constantly in mind. The first is not to locate the center of interest in the exact center of the picture; and the second, not to show two or more trees spaced an even distance from one another or the margins of the picture. Such defects can always be prevented by selecting a suitable viewpoint from which to photograph.

If the subject is a fairly open one, the sky should be regarded as more than a mere empty background. It is always an integral portion of the composition, and the tonal values of sky and foliage react upon each other, either favorably or otherwise, according to the balance maintained. The foreground and foliage may be rendered in a natural key yet appear too dark, and the feeling



"CLAD IN NATURE'S RICH ARRAY" WILLIAM S. DAVIS

of luminosity in the sunlit passages be neutralised, when the sky is much too high in key. On the other hand, exaggerated color-correction, produced by use of a very deep ray-filter, gives a clear sky a leaden aspect, and the greens in the lighted portions of the subject appear relatively weak in tone. Either extreme is unsatisfactory. Small patches of sky seen through openings in dense foliage often make disturbing spots of highlight; and, although the use of a moderately strong yellow filter helps to keep these lower in tone, it is sometimes necessary to subdue such places afterward by local reduction on the negative or a little retouching upon the prints.

Although not in any way underrating the beauty of compositions which show trees in their entirety, I would call attention to the variety of effects obtainable by choosing a nearer viewpoint, which allows of featuring drooping branches framing a glimpse of distant trees or open landscape, such vistas often being seen when looking out from the edge of a clearing. The low, spreading boughs of an old apple-tree as a setting for some farmhouse beyond is another suggestion; and, in the forest the light, as it filters through a translucent screen of leaves, creates contrasts of light and shadow which are changing constantly as the angle of illumination alters.

The charm of many a foliage-study will be enhanced if water can be utilised as an accessory in the foreground, more especially when quiet enough to show reflections, though the latter should not be of mirror-like perfection, since these would form a dual point of interest. Water also affords, at times, the means to introduce light-tones back of a group of trees, as in "Clad in Nature's Rich Array", or its smooth tones may serve as a foil for the detail in thick masses of foliage—a use shown in the illustration called "Willows by the Waterside."

Quality of definition has a decided influence upon the interpretation of a subject; a certain amount of softness or diffusion being helpful, since it fuses minute details into broader, and more harmonious, masses, and at the same time tends to suggest better the vibratory action of light-filled atmosphere between the subject and observer. Good taste must determine the degree

WILLOWS BY THE WATERSIDE — WILLIAM S. DAVIS

of diffusion employed, some subjects being benefited by much more than others will stand. A soft-focus lens can be used advantageously upon cameras of sufficient size to permit of careful visual focusing. Some softening of the image, though different in quality from that produced by the class of lenses just mentioned, may be obtained with those intended normally to yield sharp results by employing a small stop —let us say F/22 or smaller—and racking out the lens about one-quarter to one-half inch beyond the normal distance. Such a procedure gives gradation of softness in the lens-image without the round "blobs" of spottiness in the background so often noticed when an anastigmat or rapid rectilinear is employed at a large aperture and focused upon a nearby object. The back or front combination of some anastigmats being only partly corrected for optical errors, give excellent results when used as long-focus landscape-lenses. One of the principal advantages of using a view-camera, or other type fitted with a focusing-screen, is the opportunity it gives to regulate carefully the relative degree of definition in different planes, which affords a helpful means of accentuating some part and increasing the impression of separation or depth of perspective. This cannot be done with certainty when a miniature camera is used, though many are willing to forego some advantages of the larger outfits for the sake of light weight and ease of mechanical operation, and there is no question but a great deal of successful pictorial work has been produced by means of small instruments in capable hands. However, if one elects to work with a pocket-equipment, clear definition in the little negatives should be aimed for and such diffusion as seems desirable introduced at a later stage of manipulation by one of the various methods available.

The use of a tripod is frequently essential whatever the size of camera used, and a large direct-vision finder will be found a valuable aid to compose a view, especially when the camera employed does not have a groundglass.

Employment of orthochromatic emulsions, a ray-filter of three- to five-times strength, particularly when the sky is much in evidence; very *full* exposures; and development of negatives for somewhat less than the normal time, or, instead, greater dilution of the developing-solution, if the tray-method is used, are the technical factors which ensure suitable negatives from which prints of the highest quality may be made.

With regard to the choice of printing-mediums for this class of subjects, rough bromide will be found excellent, and it is the simplest for the amateur to work. A warm black, such as is produced by full timing of the print and plenty of bromide in the developer, is well suited to the rendering of sunny foliage-effects; a cream-tinted base often increases the mellow quality. Another agreeable combination for some scenes

is that of a normally cold, black image on a buff paper. The tint of the latter showing through the silver deposit gives an olive-cast to the image, which in the deeper shadows contrasts pleasantly with the warmer, sunlit passages. Prints on white stock can easily be given a buff tint by staining in a *very weak* bath of orange or yellow aniline dye. Cool mist-effects are best suggested by a pure gray-black image on white paper, a result obtained by reducing the exposure of the print to the minimum and then developing to the limit in a dilute developer that contains only a sufficient amount of bromide to prevent fogging of the highlights. A sepia-toned print may occasionally fit such subjects as a landscape seen through the golden haze of late afternoon; but, as a rule, such a tint is not in keeping with the general feeling of summer-foliage, being suggestive, rather, of the hues of late autumn. Although it is not desirable to try to imitate the prevailing color of a scene in a monochrome-rendering, it is quite proper to pay attention to the power of warm or cool tints, such as those mentioned, to suggest the characteristic note of the original. Advanced workers who are familiar with the technique of such pigment processes as gum, carbon, and oil, will naturally find their richness of surface texture particularly adapted to expressing the depth and general quality of thickly-massed foliage.

Unless there is a special reason to maintain uniformity, the "key" of each print should be considered in selecting the mount. Usually one of a shade somewhere between the middle-tones and light-portions of the picture will prove harmonious; but a good deal depends upon the relative amount of light and dark in the composition. An assortment of tinted borders is not recommended; but, sometimes, a simple narrow border of the same color as the mount, but of a little lighter or darker shade, will add to the harmony of the ensemble.

More About Hot-Weather Photography

W. X. KINCHELOE

THE close of the summer-season in 1921 left me with a great deal of experimenting in hot-weather work still to do, if I were to have that comfortable feeling of knowing that my methods were the best possible for my work. The developer could have been warmed, and some developing-experiments carried out through the winter, which was done; but these results, so far as negative-making was concerned, should not be taken as proof that the methods used would give exactly the same results during the actual summer-season. There are several reasons for this, the principal ones being that during the winter, the wash-water and the air in which the negatives dry are much cooler, and this affects the drying-quality and grain of the negative. Also, the light is not so intense, and the plate is cool when it is exposed; this affects the contrast-producing action of the developer.

The beginning of the summer of 1922 found me with a plentiful supply of plates, films, and film-packs on hand; also such chemicals as I required, and a determination to find out for myself what materials and methods could be relied upon to give the most satisfactory results under average, and very adverse, conditions. The first series of experiments was to determine the most satisfactory plate or film for use to photograph homes and to make the most of the surrounding flowers, shrubbery and general landscape. The Cramer's Iso plates, both with and without filters, showed a marked superiority over others that were tested. The Instantaneous Iso plate was best for instantaneous exposures and for work with a view-camera. Where ample time could be given, the Medium Iso stood in a class by itself in its ability to reproduce and to separate every tone-value of color, except the dark reds. It is very sensitive to the greens and yellows that are usually found in flowers and landscapes. The exposures with it are shorter than with other much faster plates, when exposing for good detail and color-values.

Of course, these tests were all made by making exposures one after another in the same subject with different plates and films, with the shutter working at the same speed, and the differences in plate-speeds being adjusted with the diaphragm-stop. These results were accepted as being only tentative, as the weather-conditions during the spring were almost ideal for negative-making; so that, although I adopted the Cramer plates for my regular work, it was intended that the comparative tests were to be continued through the summer.

One reason for wishing to get to the bottom of the hot-weather developing problem was that for some time the idea of taking a two or three months' cruise in a small launch had been one of

my most treasured dreams. I wished to go through the inland waterway on the east coast of Florida to the St. John's River, and up it toward the Glades as far as there is water enough to float a small V-bottom launch; meanwhile exploring and photographing the Oklawaha River to my heart's content. To obtain the best pictures of these regions, the trip should be made during the spring or summer months; and the plates would have to be developed without ice or cool water to reduce the temperature of the solutions. These experiments, then, were to prepare me for that trip, so that when the time came, I would know that I could produce clean, fine-grained negatives of as good quality as I could make at home.

The late Julian Dimmock spent a summer on a houseboat in the Glades, preparing material for one of his books on Florida; and I remember that he also used the Cramer Medium Iso plates; but he tried to develop them in a tank, using pyro-acetone formula, and cooling the tank with ice-water. The emulsion softened and would not dry, so that, finally, he tried shipping the exposed plates north to be developed there; but, if I remember correctly, some of the plates had spoiled by the time they were opened.

This made me try out a series of experiments; first, hardening the plates before development; and second, incorporating hardening-agents with the developer. Good negatives can be made by immersing the plate or film in a 1 to 60 solution of formalin in water for two or three minutes; then rinsing well, and developing as usual. I tried this out on a hot day when the room-temperature was 90 degrees F., and the wash-water was 80 degrees F., by warming all the solutions to 100 degrees F., and developing a correctly exposed Medium Iso plate in the amidol developer made up for 95 degrees F. (see page 300, PHOTO-ERA MAGAZINE, June 1922) and obtained a fairly good negative. This was done experimentally only, as in Florida, at least, it will never be necessary to develop many negatives at higher temperatures than 90 degrees F. At lower temperatures, the method worked well.

As for incorporating the hardening-agents with the developer, it can be done; and, with more experimental work, a satisfactory formula might be worked out; but my experiments did not proceed to that point. The following formula, taken from the *British Journal Almanac*, was responsible for the series of experiment:

HYDROCHINONE WITH FORMALIN

Hydrochinone	40 grs.
Sodium-Sulphite (anh.)	400 grs.
Formalin	50 drops
Water	5 ozs.

This formula gives a very intense negative; and I did not produce one that printed well, although it might be done with one of the high-speed plates. It hardens the film noticeably. The next step, then, was the use of other developing-agents and combinations with formalin. Also the use of other hardening-agents in an amidol developer; but although I evolved some that developed, the quality of the negatives was not the best.

In practice, I had found that the Cramer plates which I preferred for their other qualities were also the best hot-weather plates; and that perfect negatives could be made with them when developing at room-temperatures up to 90 degrees F. without any hardening-agents except the chrome alum in the fixing-bath. (See page 302, PHOTO-ERA MAGAZINE, June 1922 "Chrome Alum Fixing-Bath with Acetic Acid.") With other plates and films, to be on the safe side, it is best to follow carefully the methods given in that article.

The paramidophenol-hydrochloride developing-formula given on page 300 of PHOTO-ERA MAGAZINE, June 1922, is the best of those formulæ to develop instantaneous exposures, as the amidol formula for high-temperature work contains enough restrainer to slow up the plate somewhat. For view-camera work, I prefer the amidol where full time can be given the exposures, as it makes the cleanest, clearest, best negatives I have ever seen. Also, it almost never forms air-bubbles on the plates; but the other formula has to be watched closely in that respect. As paramidophenol-hydrochloride is said to be the reducing-agent in Rodinal, I was interested to find out how that worked at high temperatures. As the photo-supply house here had none in stock, I made up the following solution, which has been given as the formula for Rodinal:

Potassium metabisulphite	3 oz.
Paramidophenol-hydrochloride	1 oz.
Hot distilled water	10 oz.
Sodium-hydrate, saturated solution	q. s.

When the first two are dissolved, add the saturated solution of sodium-hydrate slowly until the precipitate first formed is dissolved, and the solution becomes clear. At the time this was tried, I had used all my plates which were being used for comparative tests, so this home-made Rodinal has been tried out only on Cramer plates. With them, at temperatures between 80 and 90 degrees F. it produces just as good negatives as the above-mentioned formula, and is very convenient to use when traveling. Because it contains caustic soda as the alkali, I was afraid it would soften the emulsions unduly; but, in practice, it does not seem to do

so. Negatives made with it will stand fifteen or twenty minutes' washing in running water at a temperature of 80 degrees with almost no frilling at the edges.

Another series of experiments was an effort to get the pyro-color, for those who might want it, in negatives developed in these high-temperature formulæ. This was tried out by adding small quantities of pyro to these various developers, making duplicate exposures, and developing them for the same time, one in the normal developer, and the other in the developer with the pyro added, and comparing negatives and prints. I could make negatives with some pyro-stain; but they did not print any better than the check negatives developed in the normal formulæ.

I did work out a formula for a pyro-developer which would do good work at high temperatures; but it was not an all-around developer. Like the metol-hydrochinone formula given on page 300 of the June 1922 issue, it was only adapted to high-temperature work. This series of experiments, however, finally turned my energies into another channel, where I evolved what I consider the best possible developer for use on plates at normal to high temperatures during the summer-months. It is as follows:

PYRO-METOL ACETONE DEVELOPER

First make up the A and B solutions of Cramer's Pyro-Metol Developer in one solution.

Pure water	30 ozs.
Metol	1 oz.
Citric acid	40 grs.
Pyrogallic acid	½ oz.
Bromide of Potassium	20 grs.
Sulphite of Soda (Cramer's dry)	4¼ ozs.

For use take stock-solution ½ oz., water 10 to 20 ozs., and Cramer's Liquid Acetone 2 drams.

This developer makes negatives which are ideal for my purposes, as I work with a 4 x 5 camera and make prints of the required size by enlarging. It seems to have the faculty of developing plates that have been exposed in the brilliant light of a tropical summer so as to make negatives which are thin, and yet yields prints of a soft, beautifully graduated brilliance.

As for fixing-baths, I have not been able to find anything better than the ones used last year which were published in the June issue already mentioned. There was no need to experiment further along that line; for, the chrome-alum bath when used at a temperature of 90 degrees F. will harden the plates I use so that there will be almost no frilling at the edges when they are washed and put on the rack to dry.

For scientific development, there are two methods in general use, the factorial, and the time-and-temperature systems. Each has its advantages and disadvantages. The time-and-temperature system is based on the fact that at a certain temperature a developer will produce a certain amount of contrast on a given plate in a given time; at a higher temperature this amount of contrast will be attained in less time, and at a lower temperature the time required will be longer. The time required to reach this standard degree of contrast varies with different brands and speeds of plates and films; but these factors have all been worked out by Mr. Alfred Watkins, who originated these two methods of exact development, and tables are published which give the proper dilution of the developer, and time necessary to develop all plates and films at various temperatures.

The disadvantages of this system are that all of the plates, being developed together, must have the same speed of development if they are all to attain the same contrast at the same time. Also, as a photographer frequently covers quite a wide range of subjects in the course of a day's work, often including flashlights, home-portraits, outdoor-views and flower-studies, it is not desirable that they should all be developed to the same contrast-range. However, in working with one plate or film, where the subjects are of about the same general character, this system offers at once the most convenient and the most exact method.

The factorial method is based upon the fact that with each developing-agent the time from the instant the developer is poured over the plate to the first appearance of the image bears a certain fixed relation to the time that plate will be developed to a standard degree of contrast. This is known as the factor for that developer. For instance, if some developer has a factor of 10, if the image appears in 20 seconds, the development will be completed in 10 x 20 seconds, or 200 seconds. This factor-number is not influenced by temperature, or brand of plate, and, if the exposures have been correct, will develop each plate to the same degree of contrast. As this is not always desirable in practice, the photographer usually works out a system which uses different factors for different classes of subjects, and for different printing-processes.

The disadvantages of the system are that it has a tendency to over-develop underexposed plates, and to underdevelop overexposed plates. Also, in using very rapid plates, one may fog the plates from the developing-light while watching for the first appearance of the image. However, this is not so likely to happen in hot-weather work, as the image appears in a few seconds.

Either of these systems may be used with any of the above-mentioned formulæ. It is simply a matter of suiting one's convenience or preference.

The following are suggested as the factors for average use:

No. 1 Amidol	12
No. 2 Paramidophenol	16
No. 3 Metol-Hydrochinone	16
No. 4 Pyro-Metol Acetone	18
No. 5 Rodinal	30

Determining the factor which will produce negatives suitable for any printing-process or contrast-range is very simple. Expose a plate or film on a subject of average contrast in a bright light, giving as near the correct exposure as possible. Then develop it in the solution whose factor you wish to determine, noting carefully the time elapsing from the time the developer was poured over the plate to the first appearance of the highlights. Continue the development until, by inspection, you think the contrasts are right, noting also this total time of development. By dividing this total time in seconds by the number of seconds elapsing before the first appearance of the image, the factor used in developing that plate is obtained.

Study this negative carefully, print from it, enlarge from it. If its contrasts are too great, reduce the factor for the next trial; if it is too flat, increase it. After a few trials, a negative will be obtained whose contrasts are right for your class of work. Then stick to it for work under the same conditions; for thousands of negatives can be made which have the same contrast-range.

The density of the negative and the amount of shadow-detail are controlled entirely by the length of exposure. The first purchase made by a photographer after his graduation from the "Let-George-Do-It" class should be "Photography, Its Principles and Applications" by Alfred Watkins; as modern, scientific, photographic work is based upon the principles and facts set forth in this book.

The time-and-temperature tables for the use of Rodinal have been worked out by Mr. Watkins, and are also published separately, so that it will not be necessary to publish all the plate-classifications and dilutions here. As his table of temperatures stops at 86 degrees F., I have continued it to 90 degrees F.

86 degrees	2½ minutes
88 degrees	2¼ minutes
90 degrees	2 minutes

The time-and-temperature tables for the other developers I have not worked out. The temperature of my darkroom at 8 o'clock P.M., from May 15 to September 15, is almost constant, never lower than 80 degrees F., never higher than 90 degrees F. The average during the spring months is about 80, which gradually increases until during July and August the average is about 86; so that I have the data for only these temperatures.

Using the Cramer's Medium and Instantaneous Iso plates at 86 degrees F., the development-time is about as follows:

Paramidophenol Hydro. formula No. 2	1¼ mins.
Metol-Hydrochinone	2 mins.
Pyro-Metol Acetone 1-20-	3½ mins.

During this summer, I am not using the amidol formula No. 1; for, with the plates I am using, the ammonium-sulphate is not necessary. During the winter and spring months, I make up the developer immediately before use as follows:

Water	1 oz.
Sodium-Sulphite, anh.	10 grs.
Amidol	2½ grs.
Potassium Bromide 10% solution, 2 to 4 drops	

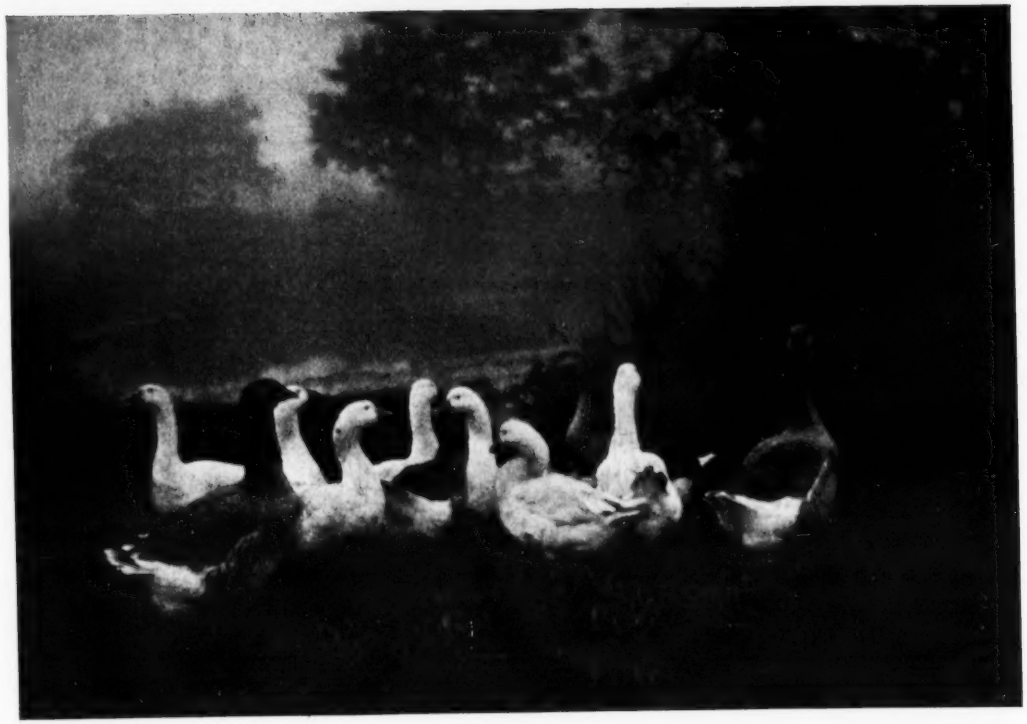
During the summer-season, or when the room-temperature reaches 80 degrees or over, more restrainer is needed. The Cramer's Amidol formula then works perfectly. It is as follows:

Water	5 ozs.
Sodium-Sulphite, anh.	44 grs.
Potassium Bromide	2 grs.
Citric Acid	2 grs.
Amidol	12 grs.

These formulæ work very rapidly, and, with the above conditions, will develop the plate in about 1¼ minutes and yield beautifully clear, well-graded negatives.

It must not be inferred that I recommend developing one's plates at high temperatures from choice. On the contrary, these experiments were undertaken, as stated before, for a definite reason. As most of my work is done in the far south, I wished to be sure that I could develop my plates satisfactorily under the most trying of tropical conditions. There is no necessity to do one's developing at a higher temperature than that of the water-supply, for it can be used to cool the tanks and trays. If ice is available, the developer and fixing-bath can be cooled to a few degrees lower than the water-supply without ill-effects. The fixing-bath will warm up somewhat during the time the plates are fixing and hardening.

In conclusion, I would suggest that except in cases where speed is really necessary, a plate of medium rapidity will be found best for summer-work. They are not only easier to handle through the process of negative-making, but their greater latitude permits better rendering of values under the more intense light of the summer-season.



ONE OCTOBER MORN

J. HERBERT SAUNDERS

EDITORIAL

Prerequisites for Making Bromoils

WITH spring at its height and the first summer-months not far away, the pictorial worker will not lack for inspiration as well as opportunities for individual interpretation. He is probably one of many who are eager to perpetuate new and delightful themes by means of the increasingly popular manipulative process —bromoil. Although a twin-brother of the Autochrome process—about sixteen years old —bromoil has never enjoyed greater favor in this country than at present and, although the latest and best information on the subject is easily obtainable from standard textbooks, certain prerequisites appear to have been entirely overlooked, viz., a full appreciation of values and the ability to draw correctly.

It is only too true that the average worker in manipulative processes, gum bichromate, bromoil and others, shows no appreciation of tone-quality, and little knowledge of form, line or perspective (linear or atmospheric). He not only spends his time and energy in creating false impressions—meant in a double sense—but exposes himself to criticism and ridicule. He really imagines that his pretense will not be discovered and that his productions will pass unchallenged. Even so, there can be little personal satisfaction in a performance that is founded on sham rather than on careful study and intelligent preparation. If inconvenient to take a regular course in drawing, the beginner may avail himself of a reliable method of home-study which will enable him to work intelligently and successfully in bromoil or any other manipulative medium, in monochrome or multiple-color. The method referred to is the one originated and taught by Anson K. Cross of the Boston Museum of Fine Arts and described by him in the October, 1922, issue of PHOTO-ERA MAGAZINE. Sincerely desirous to aid the serious worker in bromoil or in any other worthy photographic endeavor, the Editor has personally investigated Mr. Cross' method, "Drawing and Painting Self-Taught", and has found it amazingly simple and efficient. He did not imagine that such superb results as he saw could be obtained in so astonishingly short a time, and by pupils some of whom were quite unpromising at the start. Results which by the usual art-school methods take years to acquire, are here obtained in a few months' practice. The Editor also finds that Mr. Cross is willing to lend to responsible camera-clubs examples of work done by his students, which will demonstrate the rapid progress that is possible with his method. The facility of drawing correctly, of recording true values and of expressing a distinct individuality, together with the artist's vision of color and tone, thus obtained, will enable the worker in bromoil or in multiple gum to exercise greater control in manipulation and to modify the final result according to his desire. The serious bromoilist knows also that with his medium he has the power to express the definite idea that is in his mind and, therefore, more than what the negative has recorded. In portraiture, too, a knowledge of anatomy gained by drawing or modeling from life will be of inestimable service. Indeed, without that knowledge he may be led unwittingly to distort the facial structure, and that would be fatal. For instance, if in his preliminary studies in portrait-lighting the beginner practises with a good plaster-cast of a bust, by passing his fingers around and over the head, neck and features, he will become familiar with their physical structure. In this way he can ascertain where a certain surface ends and another begins. Such knowledge cannot fail to be of help in his bromoil-work—building up the image. Of course, the use of the brush in pigmenting requires a special knack; but this is soon acquired. Finally, there is no reason why an intelligently planned and properly executed bromoil-print should not excel in truth, beauty and distinction, and win for the artist expert-recognition and true, personal satisfaction.

AN editorial writer in the *New York Herald* expresses the hope that, "were color-photography worked out to perfection, poets would no longer be able to speak of the fugitive beauty of the rainbow." Direct color-photography finds its best exemplification in Lumière's Autochrome which, although not absolutely perfect, is capable of picturing with remarkable realism and fidelity the delicate tints of the orchid, the ruddy glow of fiery flame, the gorgeous coloring of autumnal scenery and, likewise, the elusive beauty of the arching *rainbow*.

ADVANCED COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA MAGAZINE, Advanced Competition
Wolfeboro, New Hampshire, U.S.A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $3.00.

Honorable Mention: Those whose work is deemed worthy of reproduction in later issues will be given Honorable Mention. This includes a certificate suitable for framing and a coupon which will entitle the holder to a credit of Fifty Cents towards a subscription to PHOTO-ERA MAGAZINE, or towards the purchase of photographic books listed with the coupon.

Prizes may be chosen by the winners, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA MAGAZINE, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Prints may be regarded as ineligible for a competition if any of the following rules are not fully complied with by the contestant.

Rules

1. This competition is free and open to photographers of ability and in good standing—amateur or professional.

2. Not more than two subjects may be entered, but they must represent, throughout, the personal, unaided work of competitors. Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered into competitions elsewhere, before PHOTO-ERA MAGAZINE awards are announced.

3. Prints on rough or linen-finish surface, and sepias, are not suitable for reproduction, and should be accompanied by smooth prints having the same gradations and detail. All prints should be mounted on stiff boards. A narrow margin is permissible.

4. Each print must bear the maker's name and address, the title of the picture, and the name and month of competition, and should be accompanied by a letter, *sent separately*, giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer, and printing-process. Enclose return-postage in this letter. Data-blanks sent at request.

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA MAGAZINE, unless for special reasons. This does not prevent the photographer from disposing of other prints from such negatives *after* he shall have received official recognition.

6. Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with data. Criticism at request.

7. Prints should be carefully packed between two layers of cellular board so cut that the corrugations run at right-angles to each other. Large packages may be sent by express, prepaid.

8. Competitors who have won three first prizes within a twelve-month become ineligible to compete for prizes in this competition for two years thereafter.

Awards—Advanced Competition
Child-Studies
Closed March 31, 1923

First Prize: Walter P. Bruning
Second Prize: Louis F. Bucher
Third Prize: Herbert J. Harper

Honorable Mention: A. C. G. Allison; Maxfield Bear; Alec Blackie; Lester W. Ballou; Wilson D. Carey; Albert H. Dockray; E. B. Draper; H. L. Fairfield; Louis F. Garday; Dorothy Jarvis; Eleanor F. Jones; W. X. Kincheloe; Frank Reeves; Arthur W. Rice; H. B. Rudolph; J. Herbert Saunders; U. M. Schmidt; Harold C. Thorne; A. L. Tracy; R. M. Weller.

Subjects for Competition—1923

"Home-Portraits." Closes January 31.
"Miscellaneous." Closes February 28.
"Child-Studies." Closes March 31.
"Artistic Interiors." Closes April 30.
"Bridges." Closes May 31.
"Marines." Closes June 30.
"Landscapes with Figures." Closes July 31.
"Summer-Sports." Closes August 31.
"Parks." Closes September 29.
"Architectural Subjects." Closes October 31.
"Domestic Pets." Closes November 30.
"Indoor-Genres." Closes December 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup, of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Competitors Should Mind the Rules

COMPETITORS, in the Advanced Workers' and Beginners' Competitions, are inclined to ignore some of the rules, one of which is that the name and address of sender, also name, month and kind of competition must be written plainly on the back of each print. Otherwise, how is the jury to know?

FULL OF GLEE — W. P. BRUNING

FIRST PRIZE—CHILD-STUDIES

To Remove the Coatings from Old Negatives

MANY suggestions have been made to remove the coatings from old photographic negatives, says Prof. Dr. F. Lummer, who for many years used a method which he claims fulfills all the following conditions: 1. It is practical and cheap; 2. the coating is removed quickly; 3. it can be preserved for the recovery of the silver in it; 4. the plate is uninjured; 6. the chemical used is harmless and can be bought in the market; 7. the method can be employed on a large scale or by professionals and amateurs, and is practicable for small plates; 8. it can be used successfully by unskilled help. Heretofore, nitric acid, soda, hot water, steam, etc., have been employed for the purpose; but all have been found either too expensive, too troublesome or otherwise unsatisfactory.

The use of hydrofluoric acid has long been known and recommended by photographers; but should be taken in a very dilute form, as it is not sufficiently harmless, is too expensive and it is unnecessary to use it stronger than 1 to 2 per cent.; and the acid itself must be kept in leaden or gutta-percha containers; besides, if the solution is too strong it is apt to attack the plates and render them unfit for further use.

A number of compound salts of hydrofluoric acid have been found to remove the coatings very satisfactorily, among them acid ammonium fluoride, sold under the name of "Mat salt." A half-teaspoon of this salt dissolved in 3 or 4 ounces of *cold* water prepares the solution and the negative to be stripped immersed in this for a few seconds. As soon as the coating is wet through it begins to peel off. It is then taken by one corner, pulled off entirely and laid to dry on a sheet of straw-board. Adhesion to this can be prevented by turning over the film as soon as the upper surface is partly dry. The glass-plate is left perfectly clean and only needs to be rinsed off and

"IT'S YOUR PLAY!" LOUIS F. BUCHER

SECOND PRIZE—CHILD STUDIES

dried. Distilled or rain-water should be used to make the solution. The ammonium fluoride is not suitable for removing the coatings on films or paper. There is difficulty in removing the coating when the plate has been varnished; but most of the varnish can be removed by rubbing with a wad of cotton dipped in denatured alcohol and the film will then come off readily.

In the weak solution given above, no effect has been observed on the trays or other photographic utensils in which it was used, nor has any irritation of the fingers been noted.

Report of Wissenschaftliches Institute.

Focal Lengths and Plate-Sizes

A GOOD many years ago the late T. R. Dallmeyer wrote an interesting little book, entitled "A Simple Guide to the Choice of a Lens." It was a curious feature of this publication that, although it was filled with valuable information on lens-matters generally, there was only one point in it which justified the title. In one place it did recommend the choice for all-around work of a lens having a focal length equal to the diagonal of the plate upon which it would most often be used. There was, of course, nothing novel in this recommendation. For a score of years previously lenses of the more rapid types had been listed for the various standard sizes of plate on practically this basis, that is to say, the normal focal length for 3¼ x 4¼ was 5½ inches; for a 4 x 5, 6 to 6½ inches; for 4¾ x 6½, 8¼ inches, and so on. Although it is impossible to trace the origin of this standard, many years of experience have proved its advisability, and the novice in lens-buying will do well to be guided by it.

It must not, however, be assumed that there is any fetish in this proportion, for in many cases a much greater comparative focal length will be found to give better results, and in others a shorter one, giving a wider angle, is sometimes demanded by the nature of the subject. It has been urged by some writers that the focal length of the lens should be equal to the distance at which the resulting photograph would be viewed, and that the average distance for people with normal vision being 14 inches, all photographs, no matter what their dimensions, should be taken with a 14-inch lens. This is manifestly absurd, in view of the very large proportion of photographs which are made upon plates smaller than 6½ x 8½, upon which size a 14-inch lens might profitably be employed with most subjects. It must never be forgotten that perspective is governed entirely by the viewpoint, and is not affected either by the construction or focal length of the lens, provided that the same angle is included. This can be demonstrated by making one negative with a double lens and, without moving the camera, another with one of the components; upon enlarging the central portion of the first negative until the details are exactly the size of those in the second, it will be found that the outlines coincide exactly.

Wide-angle lenses, that is, lenses whose focal length is short in relation to the plates they are used upon, are responsible for much of the bad reputation which photography has earned among artists. The artist, either consciously or instinctively, reconstructs his perspective when he is drawing a subject in a confined position. But the photographer has no such power. Provided that his lens is rectilinear, he is forced to put up with a correct rendering in linear perspective, no matter how offensive to the trained eye it may appear. Wide angles are a necessary evil in many branches of commercial photography; they should be avoided by the

EVELYN HERBERT J. HARPER

THIRD PRIZE—CHILD-STUDIES

artistic worker, unless he has a definite object in employing them.

In classifying lenses no attention should be paid to any descriptive engraving upon the mount. For all practical purposes, the focal length and the extreme size of plate which can be covered are the necessary data; apart from the intensity or speed, these indicate the limits of their usefulness. For example, a 12-inch wide-angle landscape-lens, made to cover a 10 x 12 plate, may do more effective service as a narrow-angle lens upon a 4 x 5. Conversely, a 5½-inch anastigmat, normally a 3¼ x 4¼ lens, may be used at a pinch as a wide-angle lens upon a 6½ x 8½ plate.

The original type of telephoto-lens, especially when of rather low power, is an instrument which has never been appreciated at its true value by the great majority of photographers for either technical or artistic work. Like many other new inventions, it fell into the hands of the "stuntmongers," who strained its capabilities to the utmost, and created an impression that it was unsuitable for everyday work. The great merit of this type is its possession of a variable focal length, so that with the same lens the desired angle can be embraced upon virtually any size of plate. With a moderate-power attachment the normal plate is covered with a minimum equivalent focal length of three times that of the positive lens. Thus, using an eight-inch rectilinear and a four-inch negative attachment, an equivalent focal length of 24 inches is obtained with a camera-extension of eight inches, and for every four inches of camera-extension, eight inches are added to the focal length. When objects at a considerable distance have to be photographed there is often a lack of contrast, but this is due to the atmospheric conditions, and not to the lens. It may be minimised by using a slow "contrasty" plate and developing fully.

The modern one-focal-length telephoto-lenses, such as the Teleros, Dallon and Cooke, differ only from ordinary lenses in that they require for distant objects a camera-extension of only about half their equivalent focal length. These lenses have somewhat limited covering-power, and cannot be used for anything like the normal angle, so that it should always be considered whether, in purchasing, say, a 16-inch lens, it would be advantageous to procure an anastigmat which would cover up to 10 x 12, or a telephoto of the same aperture which would cover less than a 6½ x 8½ plate. It depends on the results wanted.

SUBJECT FOR NEXT COMPETITION

ADVANCED WORKERS

THE RIVER — EMILY H. HAYDEN

EXAMPLE OF INTERPRETATION

Advanced Competition
Landscape with Figures
Closes July 31, 1923

THE landscape is probably the most popular subject that the average camerist attempts to photograph. Except on a windy day, the trees, the bushes or grasses in the foreground or in the background of a landscape remain reasonably quiet; there is usually time to compose the scene to advantage and, in short, there is rather a restfulness about landscape-photography that is lacking in some other subjects. However, in this competition, it is our desire to avoid making things too easy for the worker. Just to make him think and to plan carefully, we are stipulating that the landscape shall include figures.

Although there are some of our landscape-photographers who aver that to include figures is to spoil an otherwise excellent photograph, we are of the opinion that there are times and places when it might be an advantage to add a figure to the composition. It may be well to point out that there is a great difference between figures in landscapes and landscapes with figures. The two should not be confused. In the present competition, the first and most important consideration should be the landscape, and whatever figures are included should in no way hold the beholder but rather help him to a greater appreciation of the landscape and its beauty. Moreover, the technical skill and sound artistic judgment required will be an incentive to those of our readers who are really eager to test their photographic wings.

It should be evident that, to meet the requirements of this competition, the camerist must select a good landscape-subject; then, he must so place the figures that they will harmonise and add to our *appreciation of the landscape*. This he may regard as a comparatively simple problem to solve; but just let him make the attempt! Often, try as one will, the figures will persist in attracting too much attention. That is, the result is a picture of figures in landscape, the exact opposite of the objective we hope to attain in this competition.

Some workers suggest that the figures be included in such a manner that they appear in the composition at a distance; and, hence, because of their diminutive size, they do not confuse the beholder. This may work out well, provided that the camerist does not make the mistake to allow the figures to wear white or conspicuous clothing. I remember to have seen an excellent landscape that was virtually ruined, artistically, by a figure clad in glaring white which, although distant, nevertheless caught the beholder's eye to the exclusion of all else. Even as we might tone down a light-colored rock or fence-post, so should all figures be toned down to blend with the entire composition in perfect harmony, although the figures, themselves, might be induced to coöperate with the camerist to this end.

The question may arise as to the type of figures to employ in order to support the composition and to strengthen our interest in the main theme that the camerist has endeavored to portray. Let us remember that the figures must help and not hinder the composition. Consequently, unusual care must be exercised in their selection and placing. Perhaps one of the most familiar compositions is one which depicts an extended landscape or panorama with a person pointing or looking in the direction of greatest interest. Even though such a figure may occupy considerable picture-space, the eye naturally follows the extended arm in the direction indicated and is thus brought to the center of interest by the most direct route. Even when the figure is shown looking in the required direction, the same result is obtained. However, in cases where the landscape is more confined and the figures are not used to point out literally the center of interest, the problem becomes more difficult.

Let us suppose that there is a large, open field and in it a group of venerable, wide-spreading oak-trees which are well relieved against a subdued but pleasing background. In short, we have a delightful and restful landscape. Let us suppose that we believe in the artistic value of a group of fairies dancing beneath the old oak-trees. Mind you, we had our landscape and its center of interest before we conceived the idea of adding the dancing fairies. Our center of interest must not be disturbed and our fairies must emphasise the importance of the oaks in the composition. Of course, the quickest way to obtain this result is to request the models to face the oaks, lift up their hands in greeting or supplication and thus carry the beholder's eye to the center of interest. In a sense, we can repeat what the figures were doing in the panorama or extended landscape. However, if we wish the fairies to be dancing in happy abandon without reference to the oak-trees, so far as they are concerned, the problem assumes another aspect. In this case, the figures must be subordinated in tone and should be grouped around the oak-trees, so that the eye rests on the figures but passes on to the oaks. Just how this might be done will depend upon the individual situation in which the camerist finds or places himself.

There was a time, a few years ago, when it was customary to suggest the proper photographic equipment with which the camerist might obtain the most satisfactory results, in each competition. Today this is virtually impossible. Of course, I can give my personal opinion which might be of some service to certain readers, but I venture to say that were I to advocate the use of a 5 x 7 view-camera as the only suitable outfit for the purpose, the very next mail would bring me a beautiful print made with a *vest-pocket camera!* Modern photographic equipment is so effective that one can no longer limit any one type of camera or lens to a definite field. We have unassailable evidence every month that today it is the man or woman behind the camera, and not the camera itself, that produces results. The very moment that any limitation is placed upon a certain type of camera or lens, it is a signal to the admirers of that type of camera or lens to rush proof that they have done exactly that which we said should not be attempted with it. Consequently, I am beginning to feel that with intelligent manipulation virtually every type of camera will do good work artistically and otherwise. Not only in photography, but in other arts and sciences, we can no longer place limitations on this or that type of equipment or method. It appears to be an age when the so-called impossible is being done again and again. For these reasons, I say that any standard type of camera used intelligently may be depended upon to yield suitable pictures for this competition. What the type of camera should be, I shall not attempt to suggest; but I will have the last word and say, "Use a camera with a groundglass, or a camera equipped with a direct view-finder."

To revert, for a moment, to the matter of the figures and how they should be clothed, I might add that a pastoral scene obviously should not include figures dressed in the latest Paris fashions. Even though the figures are to be subordinated, they should not conflict with the theme to be expressed. A lone fisherman or harvester in the field should be clothed as befits the occasion.

In connection with this competition, it will be of great help and pictorial value for every camerist to read thoroughly a good book on pictorial composition. Even though all of it does not fit his particular case, he will find that there are certain fundamental principles mentioned which will serve him well in all his photographic work. Of course, he should not make his picture "according to the book." To do so would rob it of all individuality and spontaneity. However, even as the child must learn its A B C's before it can read Tennyson's poems, so the camerist should realise the value of thorough preparation before he can become an experienced pictorialist. Then, too, from the technical point of view the camerist should not fail to appreciate the importance of a sound knowledge of the mechanical details of his photographic equipment. Last, but not least, the modern anastigmat or soft-focus lens requires study and the necessary experience in order to make it conform to the will of the camerist. Lenses have an individuality of their own which must be discovered by trial on the very subject which the worker wishes to attempt. The expenditure of time, patience and effort required to master a lens is eminently worthwhile.

In conclusion, it will be well for the ambitious pictorialist to combine thorough study with sound practical experience, and thus place himself in a position to meet the requirements of this competition and his desire to make something of himself and of photography. Although some readers may feel, at times, that I overemphasise the necessity to have high photographic standards and live up to them, is there any surer way to success? I do not believe that it will be amiss to say that it has been a source of deep satisfaction to me to receive many letters in which the writers express themselves as being encouraged by these paragraphs; and, what is best of all, my correspondents acknowledge that they get more pleasure out of photography as a result. My purpose is to inform, to encourage and to stimulate, in my humble way. I am eager to have every owner of a camera make a success of photography; and the one way to bring this about is by encouraging each camerist to do his very best, *always*. A. H. B.

BEGINNERS' COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA MAGAZINE, Beginners' Competition
Wolfeboro, New Hampshire, U.S.A.

Prizes

First Prize: Value $3.00.
Second Prize: Value $2.00.

Honorable Mention: Those whose work is deemed worthy of reproduction in later issues will be given Honorable Mention. This includes a certificate suitable for framing and a coupon which will entitle the holder to a credit of Fifty Cents towards a subscription to PHOTO-ERA MAGAZINE, or towards the purchase of photographic books listed with the coupon.

Subject for each contest is "Miscellaneous".

Prizes, chosen by the winner, will be awarded in photo-materials, sold by any dealer or manufacturer who advertises in PHOTO-ERA MAGAZINE, or in books.

Prints may be regarded as ineligible for a competition if any of the following rules are disregarded.

Rules

1. This competition is open only to beginners of not more than *two* years' practical camera-activity, and whose work submitted here is without any practical help from friend or professional expert. A signed statement to this effect should accompany the data.

2. Workers are eligible so long as they have not won a first prize in this competition. Winners of the first prize automatically drop out permanently, but may enter prints in the Advanced Class at any time.

3. Prints eligible are contact-prints and enlargements up to and including 8 x 10 inches.

4. Prints representing no more than *two* different subjects, for any one competition, and printed in any medium except blue-print, may be entered. They should be simply and tastefully mounted. Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competitions elsewhere, before PHOTO-ERA MAGAZINE awards are announced.

5. Prints on rough or linen-finish surface, and sepias, are not suitable for reproduction, and should be accompanied by smooth prints having the same gradations and detail.

6. Each print entered must bear the maker's name and address, the title of the picture, and the name and month of competition, and should be accompanied by a letter, *sent separately*, giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks sent at request. Criticism at request.

7. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA MAGAZINE, unless for special reasons. This does not prevent the photographer from disposing of other prints from such negatives *after* he has received official recognition.

8. Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with data.

9. Prints should be carefully packed between two layers of cellular board so cut that the corrugations run at right-angles to each other.

Awards—Beginners' Competition
Closed March 31, 1923.

First Prize: Mrs. G. Bell
Second Prize: Chas. Ditchfield

Honorable Mention: L. J. Creegan; John T. Cromer; Lieut. Alfred E. McKenney; Stanley Shiner; Suzuki.

Purchase a Good Lens—It's Worth It

A FEW weeks ago, one of my readers wrote in for a few suggestions before buying a camera. Part of his letter went something like this: "As you know, I am just a beginner and until I know more about photography than I do at present, there is no use in my getting one of those expensive lenses. Of course, I want a good camera-box; but the lens need not be very expensive while I am learning." This beginner apparently shares the commonly accepted belief that it does not pay to learn with good tools. That is, it is assumed that the novice is too inexperienced to manipulate a good outfit without ruining it; hence, let him learn with an equipment that may be ruined without great loss, financially or photographically.

This reminds me of my tyro-days when I was endeavoring to master the game of tennis. Why should I invest heavily in a tennis-racket with which to learn? Was not a moderate-priced one as good to knock the ball around the court and to dig into the gravel? I bought such a tennis-racket. After a few days the gut became so loose that it seemed as if I were hitting the ball with a butterfly-net. Next, some of the strings parted—and this happened just when my instructor was trying to show me how to place the ball in the opposite court with force and accuracy. When it came to volleying and cutting the ball, I was unable to "carry on" at all. But what a difference when I bought a good racket! Then, I began to enjoy tennis, because I could hold my own; and whatever mistakes I made were in no way traceable to "poor tools". Moreover, it was a pleasure to have in my hand a racket that responded with a musical ring and "snap" to my demands upon it. I felt that I could play well whenever I had that racket in my hand. In short, I had confidence—and that helps mightily to win any sort of a game.

So, to return to my correspondent, I advised him—as I do all those who ask for suggestions when about to purchase a camera—to buy the very best outfit that he could afford. In a sense, the camera-box is a secondary consideration. A mahogany camera is not one bit better than a cigar-box camera, so far as picture-making is concerned. A fifty-dollar camera-box with a five-dollar lens is only as good as the five-dollar lens. Now, to be more definite. Let us suppose that there is a 2¼ x 3¼ roll-film camera equipped with three types of lenses, meniscus, rapid rectilinear and F/7.7 anastigmat. The difference in price is not very great. That is, not so great as would be the case if the anastigmat were F/6.3 or F/4.5 and made by an expensive lens-maker. Furthermore, let us suppose

LIGHT AND SHADE — MRS. G. BELL

FIRST PRIZE—BEGINNERS' COMPETITION

that this 2¼ x 3¼ camera may be obtained with an imitation leather-back and moderate-priced fittings; but still fitted with a good anastigmat F/7.7 lens. If eighteen dollars is all that the beginner can afford and this is the price of the outfit just described, let him buy it in preference to a better-finished camera with meniscus or rapid rectilinear lenses at a lower price. The lens is the important part of the outfit.

It is not my intention to belittle the moderate-priced cameras. I began my photographic career with a two-dollar Brownie camera and I have the first pictures I ever made with it. There are many worse pictures that I made with a two-hundred dollar outfit. It is not a question of whether or not a good picture can be made with a moderate-priced camera. There is not a standard camera on the market today that will not make a good picture if handled properly under favorable conditions. But I am trying to point out that the fewer limitations a beginner has to overcome, the better pictures he will make. By limitations I mean conditions of light and a limited number of shutter-speeds. The better the lens-and-shutter equipment, the more likely the beginner will be to obtain satisfactory results.

Needless to say, the purchase of a good lens does not relieve the beginner of the responsibility to master its use. A hundred-dollar lens is not so good as a pinhole, if it is not used intelligently. As I have had occasion to say many times, the cost of an outfit in no way guarantees success or causes failure. I am advocating the purchase of a good lens; but this does not mean good pictures unless the camerist learns to use the lens properly. He should not expect an F/7.7 lens to do the work of an F/4.5 ultra-rapid anastigmat. What I said about cameras is true about standard lenses—all will make good pictures provided they are used intelligently.

Now, in conclusion, let me suggest to every beginner that he purchase the camera with the best lens-equipment that he can afford. Let him bear in mind that "fancy" fittings, morocco leather and mahogany woodwork, do not make pictures. All's well if he can afford it; but if not, let him put the extra money into the lens. A clear, sharp negative is a greater satisfaction than a "pretty" camera and no presentable pictures. By all means, let the beginner "go the limit" in *de luxe* outfits, if he can afford them and use them to advantage; but the average camerist will do well to select the modest outfit equipped with a good lens—it's worth it. A. H. B.

SECOND PRIZE
BEGINNERS' COMPETITION

THE SHADES OF NIGHT CHARLES DITCHFIELD

Using Single Elements of Non-Convertible Lenses

As with the print-criticism, perhaps it is not without some benefit to occasionally "accept a challenge" if it is constructive and friendly. I was immensely interested in Mr. Wendell's article in PHOTO-ERA MAGAZINE, November, 1922, its technical work being of a high standard. But, like his other friends, the particular value of this discovery for "very near work" was not quite so convincing. Perhaps there was some difficulty as to the length of the bellows drawn or extension not mentioned; but for photographing at or near some same size, what is the objection to using the complete lens? If we begin with a 5½-inch lens to produce same-size copy, the bellows is drawn out to 11 inches. But if we work with the rear element, of, let us say, 10 or 11-inch focus, then, to get same-size copy, we must have an extension of over twenty inches. As the results are precisely the same in both cases, the advantage seems to be with the complete lens. However, the point is well made as to some interesting possibilities with so-called non-convertible lenses, and it is well worth while for the owner of one of these to test it out.

For distance-work, I have used the rear element of a non-convertible, at stop F/22 with perfect results, including architectural subjects, with straight and parallel lines. Also, with the same good results, I have used this lens for enlarging with the front of the lens towards the negative—in fact, I have used it turned both ways for such work with identical results. It is a Seneca Series I Anastigmat, made, I think, by Wollensak and similar, if not the same, as a Velostigmat, although of old style. Here is an odd condition that I have not fully understood. Both of the single elements when used in the rear of the shutter are approximately 10½-inch focus, each. When used in the front, they are each of about 7½-inch focus and the images of all four tests are exactly the same size! The image of the single lens is somewhat less than twice the size of that of the complete lens, which is of 5-inch focus. How can lenses of a different focal length produce images of the same size? Anyway, the manufacturers have assured me that this is not a convertible lens. And as to the "Amateur Copyist" by Bertha Scott, the results seem to amply justify the simple accessories. I have used the bay-window lighting described with satisfactory results; but pull down the shade on the center behind to avoid shadows being thrown on the copy by the camera. This leaves the side lighting on both sides. To adjust for copy of this kind, I have a sliding platform that takes its place on the tripod-top, with the camera fastened to this. Adjust first for parallelism and then the exact size is easily fixed by sliding the platform without disturbing the other factors.

CHARLES A. HARRIS.

THE CRUCIBLE

A MONTHLY DIGEST OF PHOTO-TECHNICAL FACTS

Edited by A. H. BEARDSLEY

Double Tones with Selenium

In order to obtain different tones on developing papers, from black through violet-red to brown, prints toned with selenium are treated with Farmer's reducer. The double tones thus obtained, continues *Photographische Rundschau*, are very pleasing in photographs of evening-views, city-scenes and snow-landscapes, as they not only reproduce the gradations of light and shade but remind one of the natural colors in the original view. By shorter or longer toning, it is possible to vary the shadings over a comparatively wide scale. In the reducing-operation, the fine gradations of the lights are not lost as is the case with other prints treated with Farmer's reducer, as in this case all the silver is transformed into seleno-silver, which is not affected by potassium ferricyanide.

The well-washed prints may be toned in any desired selenium-bath without previous bleaching. Violet-tones can be obtained best from strongly developed prints. The more the original tone of the print approaches brownish or greenish, the more violet-brown will be the tone after reducing.

Bromide paper, which is somewhat difficult to tone with selenium, gives, after reducing, the same tones as the gaslight-papers, even if no greenish or brownish color is recognizable. For bromide paper a toning-bath of double strength is recommended. The time of toning may extend to several minutes.

After a brief rinsing, the toned prints are cleared in a 1 to 10 bath of potassium metabisulphite and then washed for ten minutes in running water. The wet prints are then treated in the reducer. Dry prints must be well soaked in water. The reducer is made by adding to a 5 or 10 per cent. solution of hypo enough of a 10 per cent. solution of ferricyanide of potassium to color it a light yellow. If the reducer is allowed to stand for some time or several prints have been treated in it, the yellow color gradually disappears, in which case more ferricyanide-solution must be added. After reducing, the print is thoroughly washed for at least half an hour.

The longer the toning is continued the darker will be the brown; it should be observed, however, that the prints take a deeper violet tint on drying. If a clearing-bath is not used between toning and reducing, the whites will have a yellowish tinge; but in many cases this may be desirable.

An Economical Size of Paper

Editor of The Crucible:

As one of your correspondents points out, the 4 x 6 size gives more square inches of paper for one dollar than any other size you can buy. But we may look at the question from another angle. There is no economy if the extra paper obtained is thrown away as waste. It all depends on the size of prints you generally make. In actual price per square inch, the Cirkut Camera rolls of Azo paper in the 8, 10, and 16-inch widths are second only to the 4 x 6 size, and the 10-inch roll, in particular, cuts up to good advantage for many sizes.

All of the following sizes can be cut without waste from a 10-inch width:

1 10 x 12
1 8 x 10
2 5 x 7, 5 x 8, 2⅞ x 5, or 4 x 5
3 3¼ x 3⅓, 3⅓ x 4¼ or 3⅓ x 5½
4 2½ x 3¼, or 2½ x 4½

Many other sizes can be cut by mixing sizes, such as

1 6 x 8 and 1 4 x 6
Or 1 vertical 4 x 6 and 1 horizontal 4 x 6
Also 6½ x 8½ can be combined with 3½ x 5½

and so on almost *ad infinitum*. And a roll costs only $1.25. The rolls are a convenience where one uses only an occasional sheet for an odd size, with an enlargement now and then, as it enables one to get along without a large stock which might grow stale on one's hands.

In general, I prefer the flat sizes, and find the 5 x 7 and 7 x 11 sizes the most economical. Although they cost more, they cut up to better advantage for my work. The 5 x 7 gives four 2½ x 3½, three 2½ x 4½ or two 3½ x 5 pieces; but will not give the occasional single-weight postcard that I require. The 7 x 11 will give four postcards, and with only slight waste, two 5 x 7 sheets with all the smaller sizes that may be cut from them; also a number of odd sizes which happen to strike my fancy, and the whole sheet answers very nicely for small enlargements, if needed.

The following list shows the number of square inches of single weight Azo obtainable for $1.35 in the various sizes:

3456 sq. in.	4 x 6 (gross lots) 10 or 12 extra sheets on the $1 over the next cheapest.
3200	8-inch or 16-inch Cirkut rolls
3158	10-inch Cirkut rolls
3069	5½ x 7¾ gross lots
3024	3½ x 12, 7 x 9 gross lots
3000	Regular 20-inch rolls, 10 ft. or 10 yds.
2932	7½ x 9½ gross lots
2893	6½ x 8½ gross lots
2880	4 x 5, 5 x 8, or 8 x 10 gross lots
2856	14 x 17 gross lots
2800	16 x 20 gross lots
2772	7 x 11 or 11 x 14 gross lots
2765	6 x 8 or 20 x 24 gross lots
2715	9 x 11 or 18 x 22 gross lots
2659	10 x 12 gross lots
2574	3¼ x 5½ gross lots
2210	3¼ x 4¼ gross lots
1700	2½ x 4¼
1404	2¼ x 3¼ gross lots

Note that even the regular 20-inch roll is cheaper per square inch than any of the cut sizes except the few sizes which are given above it in the list. These figures do not hold for Velox. Velox in general costs twice as much as Azo, but the Cirkut Camera Rolls of Velox cost over 2½ times as much as the corresponding rolls of Azo.

Winn W. Davidson.

FIGURE 1

FIGURE 2

A Support for the Printing-Frame

NOT being equipped with an electric printing machine, nor with the current to use one if I had had it; and not having seen on the market anything that would serve the same purpose in connection with gas, I was forced, for a long time, to print my negatives by holding the printing-frame at arm's length before the gaslight. This method, although correct theoretically, had its drawbacks when applied practically. For instance, aside from the fact that an evening of this was rather a physical "stunt" to perform, I had a most difficult time to gauge the nine inches or so which, according to the instructions that accompany the paper, was the right distance from the light. My estimate must have varied with each succeeding print, for a half dozen of them made from the same negative resembled each other almost as much as did the picture of "Hampton Roads" by daylight, and the same scene by moonlight, which appeared in PHOTO-ERA MAGAZINE recently.

Finally, in desperation, after a succession of failures that did not exceed, but equalled, the number of my attempts, I gave up printing temporarily, and turned my efforts towards devising some mechanical means whereby my printing-frame could be held at the correct distance from the light for one print, or for fifty if need be. The result is shown in Figure 1. The only raw stock needed to manufacture this stand, was: 1, A little patience; 2, a 4-foot length of stout wire; 3, a pair of pliers; 4, some short pieces of fine copper-wire—string would have done just as well—and, 5, a hammer.

The first step in making this supporting-frame was to bend the wire to the form of an exaggerated hairpin, then, beginning from the loop, to shape it as shown in the photograph. The best way to make the corners, I found, was to hold the wire rigidly with the pliers, and with the free hand bend the wire over the edge of the pliers—a few taps of the hammer at the point where the wire projected from the jaws of the pliers then flattened it into a true corner.

Perhaps the only additional explanation necessary is that the head of the "hairpin" which forms the base of the support is fitted over the key that controls the gas, and that a short piece of thin wire is wound around both support and gas-fixture at a point just forward of the key, to prevent the weight of the printing-frame from upsetting the wire-frame. Another short piece of wire is wound around the elbow, a couple of inches forward of the key, to overcome the tendency of the support to jiggle.

Figure 2 shows the printing-frame in position ready for printing. The simple little contrivance described above has been very helpful to me in enabling me to standardise the length of the exposures necessary to give my negatives. Doubtless it will be of assistance to others who might be in the same predicament that I was in with regard to lack of electricity.

ARTHUR E. TRAHAN.

The Success of the Bromide Print

THE bromide-process, in spite of all the newer printing-mediums, still holds pride of place with the serious worker, according to *The British Journal*. Many new methods of so-called pictorial reproduction are available, each of them requiring much study and experience, on the part of the worker, to bring out their best possibilities. But the bromide-print, easy to manipulate, strong, and yet with perfect gradation, still remains the favorite method of reproduction with exhibitors. At the Royal Photographic Society's exhibition, there were in the pictorial section 154 prints, 115 of which had the name of the printing-process attached to the titles in the catalog. Of these 115 prints, 64 were by the bromide-process. Next to this in number is Bromoil (direct and transfer), which claimed 24 prints, leaving 27 to be distributed over 9 other printing-processes. The bromide-process is, therefore, a long way in front for popularity, and, undoubtedly, the large amount of careful attention given to the manufacture of so many fine grades of paper and speeds of emulsion has had much to do with this. There is no negative nowadays that cannot be suited by some speed or brand of bromide paper, and prints eminently suitable to the full gamut of pictorial subjects may be obtained. The newer grades of warm-black paper have become very popular, giving, as they do, fine, rich, mezzotint-effects without the trouble of after-toning. They are specially suitable for portraiture and landscape in the present style; and it is prints on these papers which fill our exhibitions and give so much pleasure to the admirer of photographic craftsmanship, pictorial or otherwise.

ANSWERS TO QUERIES

E. S. D.—**When diluting such strong acids as sulphuric,** the acid must always be poured slowly into the water. *Never pour water on a strong acid* as the heat evolved is so great that the liquid is likely to be thrown out of the container and cause injury.

M. H. T.—**Most kinds of dirt on mounted prints** may be removed by rubbing with a piece of Artgum, or even better with a kneaded rubber-eraser, which, being softer, is less likely to mar the print. Glossy papers may have to be cleaned with a piece of cotton dampened with alcohol.

D. E. R.—**In making lantern-slides** the negative should be one that in so far as possible is technically perfect. As all defects are greatly enlarged on the screen, it is very important that the negative from which a slide is to be made be free of pinholes, scratches, stains and other blemishes. A good snappy negative is necessary, one that has been fully exposed and correctly developed.

B. G. T.—**Washing prints by hand is the most certain method.** The prints are placed in a tray of water and after three or four minutes are transferred, one at a time, to a second tray of water. The first tray is refilled with fresh water and the process repeated until the prints have been in ten or twelve changes of water.

M. J. K.—**Water may be purified for photographic purposes** by adding alum in the proportion of 15 grains to a gallon. This coagulates the slime which carries down any suspended particles, and the solution rapidly clears. This method does not remove dissolved salts, but the small amount of alum introduced into the water has no harmful effect on the developer.

D. F. G.—**A Shutter-speed of 1/300 of a second** will stop all ordinary moving objects. Without a doubt, the focal-plane shutter is the most efficient for high-speed photography. However, successful diving, running, baseball, and football pictures have been made with a between-the-lens shutter working at a maximum speed of 1/300 of a second. In making such pictures the photographer should select the angle of view carefully, so as to avoid having the subject pass the camera at right angles.

J. K. L.—**The term "Winchester"** is an old English liquid measure of 80 ounces. In fact, it is some centuries old, according to reliable authority. In reading English photo-journals the term is frequently used in formulae; and whenever "Winchester" is written, it refers to 80 ounces of whatever fluid is under discussion.

D. S. A.—**There are three commercial strengths of acetic acid:** that known as glacial acetic acid, which contains about 99% of the acid, and which is called glacial because at moderately low temperatures it freezes to a solid, a solution containing 80% of the acid, and the 28% commercial acetic acid.

A. R. D.—**A gallon of the standard strength fixing-bath** should fix one hundred 8 x 10 prints, and when these have been fixed the bath should be changed. The bath should not be overworked, because as it becomes saturated with silver the film or paper will carry the silver into the wash-water with it; and, if not properly washed the silver-salt will remain in the finished photograph and will decompose into silver sulphide in time, producing stains.

M. H. G.—**All sulphides give off a certain amount of hydrogen sulphide,** which smells offensively, and which is extremely dangerous to photographic materials, since a very small amount of hydrogen sulphide will convert enough of the silver sulphide or chloride of the material into sulphide to produce a severe fog. Therefore, no photographic materials should be kept in a room where sulphides are stored or where sulphide toning is done.

The Making of Pictures

A LIVELY debate, recently, at the Edinburgh Photographic Society, had as its subject the proposition, "That this Society devotes too much time to the making of pictures." The hypercritical might cavil at the wording, since a Society, as such, can no more make a picture than it can, say, marry. It is of the very essence of picture-making that it is an individual act; and even the rare cases in which we see an undoubted picture bearing the names of two artists are, in all probability, not actually exceptions. We have not seen a full report of the discussion, continues *The Amateur Photographer* editorially, so that what follows is not intended as any criticism of those who took part in it. We constantly read letters and hear remarks in which picture-making seems to be regarded in a false light. "I don't care anything about art," someone will say, "I want to be able to make good photographs." Such a remark assumes that the making of a good photograph and "art" can be regarded as quite distinct. Because certain photographers have adopted diffusion and other tricks to bring about the end they desire, it has come to be assumed that blur, or darkness, or mist, or some oddity of subject, constitute "art"; and that the aims of most of us, who wish to photograph some particular object as clearly and as effectively as we can, are not concerned with "art" at all. This is to lower the value of photography and to lower the value of art. When the photographer, who hates all the devices we have mentioned, concerns himself with getting what, in his opinion, is the best viewpoint from which to photograph, he is just as much employing "art" as if he were using an uncorrected lens, or throwing his image out of focus. Some of the most beautiful and, in the fullest sense, "artistic" photographs which have ever been made were clean, sharp prints, possessing all the qualities which we look for in a so-called "technical" photograph. These qualities did not, in themselves, make them "pictorial," of course; but most assuredly they did not prevent them from being so. The question whether a photograph is a pictorial photograph or not must be answered, not by an inquiry into the particular photographic technique employed in its production, but into the aims and ideals of the photographer who made it.

OUR CONTRIBUTING CRITICS

FIDALGO BAY — GEO. M. GERHARD

YOUR CRITICISM IS INVITED

Whoever sends the best criticism (not over 200 words) before the last day of the current month, will receive from us a three-month subscription to PHOTO-ERA MAGAZINE.

The winning criticism, in our opinion, is the first one printed below. Criticism should be helpful and courteous.

PRESUMABLY, this picture is submitted for criticism from an artistic point of view. If so, I should say, if it is not discourteous to say so, that the picture suffers from too-much—Horse. Personally, I am fond of horses, and when my saddle-horse, Topsey, was accidentally killed, I thought that my heart would break, but that is another story.

The modeling, if that is the term—the sense of reality—the feeling of roundness—is rendered excellently on the two horses in the foreground. The two white horses add nothing to the picture and were better left out. The foliage seems to have the right exposure; but the author evidently forgot that a near, dark object requires unusually generous exposure. The bellies and legs of the horses in the foreground, and the shadows they cast, are all as black as ink and point to underexposure. But the greatest fault is the cramped-up effect—too much crowded in an inadequate space—too much horse and too little pasture. Those eight horses would eat all the pasture shown within half an hour. The animals do not harmonise with the environment. The white streaks and the protuberances on the two horses' backs suggest an equinine surgical operation. Is this an adjunct to a drug-manufactory, or what is it? The name of the picture is Contentment. The name does not express the feelings of a critic familiar with horses on applying a magnifying-glass to the picture.

E. L. C. MORSE.

HORSES! Good, clean, healthy and contented looking horses! There's no denying this photographic impression. The technical work is excellent. In fact, the sunlight and shadows are so well rendered that the print has stereoscopic quality, so much so that by looking at the picture with one eye you can get true stereoscopic effect. Right here, I feel sure that some will disagree with me; but I'll leave it to the Editor if I'm not right.

But, certainly, Mr. Thompson must see the glaring fault in composition. The two horses in the foreground are crowded by the right border and those in the rear are yet too close to the others for proper subordination. And there is ungainly foreshortening in the horse's head and neck to the right.

Of course, no one can deny the difficulty attached to obtaining artistic compositions with this type of subject. We are at liberty, however, to spare a plate when

THE PICTURE CRITICISED THIS MONTH

the chance arrangement doesn't suit us. Mr. Thompson was evidently impressed by the view as *he* saw it; but did it occur to him that his viewpoint was about three feet higher than the lens-view? No, he didn't note the "bunching" effect which resulted from the lower viewpoint. Given a group of horses, one can scarcely attempt any suggestion for arrangement. A thousand different artistic effects are possible; one can select from chance arrangement only that which comes the nearest to his own conception of a good picture. He will learn the value of his judgment from the negative or finished print.

GEORGE A. BEANE, Jr.

A CERTAIN manufacturer of back-ache pills says in his advertisements, "every picture tells a story"—truth. But it is unfortunate that Mr. Thompson in trying to tell us a story of animal-contentment rather tells of the disastrous effects of underexposure, and over-impulsiveness in recording his discovery. The camera has an unhappy knack of seeing things we fail to see. We are told that the near horse has a growth on its back. Turning the picture sidewise, it appears that the same horse has a peculiar rear-extension; also a leg growing from its head, and, maybe, two left forefeet.

Full exposure would have "told" a different story, giving atmosphere and separating the planes; giving modeling to the underside of the animals; and, with the assistance of the trimming-knife, the jumbled mass of "horse" on the left and the sky could be cut away, leaving us with a passable picture. A print made on printing-out paper might help to reduce the excessive contrast; but what is not in the negative cannot be produced in the print. It should be remembered that along with patience, in photographing animals, longer exposure is needed for some colors than for others.

J. G. HUTCHINSON.

THIS picture is an illustration of the fact that it is very difficult to get a pictorial group of any animals. They just will not arrange themselves properly, and any assistance spells failure. This picture is well named, for "contentment" is written all over it. The highlights on both sides of the print insist on being noticed. The print is trimmed rather close on both sides. A few minutes' waiting might have proved worth while; but it might not. I believe that Mr. Thompson had been doing that very thing for some time. "Do it now!" does not always apply when photographing. This print was well timed, and well-handled afterwards. It will hardly meet the approval of the "hammer" wielders; but it is appealing to me, in that it shows a family of that matchless strain of horses—"Morgan". I love all birds and animals—horses being my favorites—and my Morgan was the peer of them all. May the autos never drive them from the New England hills and valleys. A poor criticism, this; but it expresses some of my sentiments.

J. E. CARSON.

THE picture "Contentment" reminds me of the story of the little colored boy that had the cramps in his "inner regions". The doctor thought it might be from eating too much watermelon. The mother remonstrated with the doctor in this wise: "Lan' sakes, doctor, dere couldn't be too much watermillion! It's only 'cause dey ain't enuff boy!" That is the way the picture impresses me; too much "horse" and not enough "picture". If the horses in the foreground were not present, the remaining horses would make a better picture, although by shifting the picture about an inch to the left, the two white horses in the right background would be eliminated, and the three horses in the right background would be brought nearer into the center of the composition. As the picture now appears, it seems confused.

A. L. OVERTON.

THERE are three groups in the picture, "Contentment", as I count them. One group at the left, one group in the center and one group at the right, in the distance. The group in the center of the photograph gives no balance to the picture, which is overcrowded. The center, as we know it, is the weakest point of the picture. The photograph should be made with one group of horses at the left, the other group

(*Continued on page 340*)

OUR ILLUSTRATIONS

WILFRED A. FRENCH

It is highly gratifying to find a group of photographic workers as enthusiastic in the admiration of their home-city as the Portland (Maine) Camera Club. The sincerity of this feeling is expressed in a series of pictures which are as eloquent as the historical record which they accompany. The Portland of the Atlantic coast may not equal the architectural magnificence of its more modern namesake on the western coast; but it possesses greater historical interest and, assuredly, a photographic organisation of which any city in the Union may well be proud. Moreover, as for commercial importance, the eastern Portland is in a fair way to occupy a much higher position than at present.

"The Portico", or rather a substantial *porte-cochère*, front-cover and frontispiece, is a somewhat difficult problem for the photo-pictorialist; but in the hands of Mortimer N. Bremon resulted in a picture replete with deep artistic feeling.

Data: February, 10 A.M.; 4 x 5 Premo No. 9; 6-inch Goerz Dagor lens; stop, F/16; 1/10 second; Standard Orthonon; hydro-metol; blue-gray gum-print.

"Portland Harbor," page 294, is a popular motive, but treated in a delightful manner—with a flaming sky and superb atmospheric feeling.

E. Roy Monroe's misty impression, page 295, seems to have a fitting *raison d'être* in an inspiring poetic quotation.

Data: 3 P.M.; 3¼ x 4¼ Seneca camera; 6-inch Goerz Syntor; stop, F/16; Ideal color-screen; ¼ second; Cramer Iso; enl. on Eastman Standard B bromide through a ten-inch spectacle-lens.

Floyd Grant's dreamy impression of the building which houses the Portland Society of Art, page 296, constitutes an attractive pictorial theme interpreted in a manner that doubtless pleases many picture-lovers, including members of the P. S. of A.

Data; 4x5 Rev. Back Auto Graflex; 8½-inch Cooke lens; stop, F/16; 1/20 second; Seed 60 plate; Rodinal; enl. on P. M. C. bromide No. 7 through Verito lens.

"Portland City Hall," page 297, reflects the civic pride of its talented author, Dr. Rupert S. Lovejoy.

Data: August, 11 A.M.; Icarette A, 2¼ x 2¼; Carl Zeiss lens; stop, F/11; 2-time color-screen; 1/25 second; Eastman roll-film; M. Q.; enlarged on P. M. C. bromide No. 9.

Irrespective of the poem which may have suggested the spirited theme, the picture by Alfred Brinkler, page 298, is a creditable specimen of marine photography. A degree of originality is evidenced by an unusual climax in the upper part of the picture—a large wave dissipating itself against a projecting mass of rock.

Data: August, 3 P.M.; 2¼ x 2¼ Icarette; 7.5-cm. focus; stop, F/11; 1/75 second; Eastman roll-film; metol-hydro; enl. on Wellington bromide.

J. Ludger Rainville's rendering of a street-scene in Portland, page 299, is virile and typical.

Data: 2.30 P.M.; foggy weather; 3¼ x 4¼ Rev. Back Graflex; 7-inch Verito lens; stop, F/8; 1/10 second; Orthenon plate; metol-hydro; enl. on Portrait bromide buff.

"Longfellow Square," by Dr. Rupert S. Lovejoy, page 299, does not appear to reveal this distinguished pictorialist at his best; and this must be a source of much regret to our readers. The character of the square is not too plainly evident, owing, perhaps, to the mist or a certain atmospheric quality which seems to appeal very strongly to the Portland workers.

Data: September, 2 P.M.; 3¼ x 4¼ Rev. Back Graflex; 8-inch focus Struss lens; at stop, F/8; 1/10 second; Orthonon plate; M. Q.; enl. on Eastman Artura Carbon Black, Studio Special.

"Main Entrance, Portland City Hall," page 300, is a direct, clear and brilliant representation of an engaging subject. The view-point is well chosen and the execution faultless.

Data: 10 A.M.; 45 x 107 mm. Ernemann Stereo Camera; stop, F/6.8; 1/10 second; Eastman roll-film; pyro, tank; enl. on P. M. C. bromide No. 9.

Last, but by no means least, in this series, is Francis O. Libby's eminently delightful architectural subject, the side-entrance to the Portland High School, page 301. The setting and treatment of this masterpiece of pictorial photography is strangely similar to "Staple Inn—London", a prize-picture in our "Architectural Subjects" competition of 1922, by J. Herbert Saunders, and reproduced in our January, 1923, issue. An entrance of captivating beauty is the motive in each instance, and which of these two sources of artistic enjoyment is the more meritorious would be difficult to determine.

Data: 1.30 P.M.; 3¼ x 4¼ Rev. Back Graflex; Struss lens; stop, F/8; 1/25 second; Orthonon plate; M. Q.; enl. on Portrait bromide.

A bird-article of exceptional merit and interest adorns this issue. Its author, Howard Taylor Middleton, is an artist-photographer of distinguished achievement, which is clearly evident from the nine illustrations which embellish pages 308 to 313. The data, which will be found very helpful to inexperienced bird-photographers, are contained in Mr. Middleton's article.

William S. Davis is at his best, as author, photographer and instructor, in this issue. As an artist-illustrator, he has never contributed to these pages a series of more thematically charming or beautifully interpreted pictorial subjects than those reproduced on pages 315, 316 and 317.

Data: "Summer-Shadows" is a diffused enlargement made from a sharp miniature negative made with a 2¼ x 3¼ Conley Jr. camera fitted with an R. R. lens of 4¼-inch focus. The trees stood at the edge of a thin wood, hence were fairly well illuminated by diffused light, though the lens was pointed toward the sun at 10.30 A.M. on a bright day, which made the exposure of 1/10 second with stop F/8 on Ansco Speedex film sufficient for the purpose, though more would have done no harm. However, in making comparison with the timing of the others, it should be remembered that the film used was nearly three times the rated speed of the plates; plate developed for ten minutes in pyro, about ¾ grain to the ounce.

"In Nature's Rich Array" was made about 4.30 P.M. on a day in early June; subject illuminated by good sunshine from one side; 1 second; Ilex anastigmat of six-inch focus; at F/16; Ingento, series "A", ray-filter, 3¼ x 4¼ Cramer Portrait Isonon; edinol-hydro in

tray; enlarged print given softness when focusing the image.

"Willows by the Waterside" was made the same afternoon as the last-named picture, at 5 P.M., the sunlight falling upon the scene from nearly the same angle; exposure, ½ second; no filter; front combination of the anastigmat, which gave a lens of 13-inch focus with an effective aperture, when wide open, of approximately F/14; the quality of soft definition is due to using the single combination at full opening; 3¼ x 4¼ Isonon plate.

The versatility of J. Herbert Saunders, our gifted contributor of Leeds, England, is well illustrated by his "One October Morn"—a flock of English geese, page 322. The landscape is very picturesque and the setting correspondingly pleasing. The feathered candidates for the gourmet's table may be conscious of their fate, for they seem to be "pondering the subject" with apparent anxiety.

Data: October, 10 A.M.; misty light; 3¼ x 4¼ Graflex; 6-inch anastigmat; stop, F/6; 1/25 second; Premo Film; Metol; Kodak White Royal print.

Advanced Workers' Competition

THE competition now under consideration is child-studies or rather child-life. Naturally, it is a popular subject and the entries were numerous and interesting. As was to be expected, there were many instances of "impromptu" exposures with attendant defects, such as ungainly poses, inartistic settings, unwelcome, distracting accessories and poor lighting—due mostly to lack of care, vigilance or inexperience. But here, as well as elsewhere, unsuccessful participants in this ever attractive subject will learn by their failures and, when a similar competition is on the tapis, they will be better prepared to manage difficult problems in juvenile genre-photography.

"Full of Glee," page 325, appears to be the work of a professional worker—to have been made in a well-equipped studio and by an expert. And yet there is an air of spontaneity in the attitude and expression of the comely little sitter. The fleshtones are true and the modeling throughout of exceptional excellence. Everything betrays high technical and artistic skill.

Data: 5 x 7 Korona view-camera; 11½-inch Verito; stop, F/6.3; flashbag and 2 to 3 grains of Meteor Flash-powder; Eastman Portrait Film Par Speed; pyro, tray; enl. on Wellington Cream Crayon Rough.

"It's your play!" page 326, is by a well-known amateur, and made in the home. Here familiar difficulties were met, and overcome with commendable success. The artist undoubtedly had a definite idea in his mind and, accordingly, staged and executed it. The theme is typical, consistent and attractive. It holds the attention of the beholder fond of children. The trio seem to be having a "jolly-good time," and the game is being played without the least evidence of pecuniary gain.

Data: March, 1922; light, dull and assisted by electric lights in the house; 15¾-inch Kalosat lens; stop, F/6.3; 5 seconds; Eastman Portrait Film; Ortol; print, Eastman Artura Carbon Black.

The delightful example of youthful pulchritude, page 327, bears evidence of the skill of a professional portraitist. It is well-nigh perfect from a technical viewpoint, although, incidentally, the spacious hair-ribbon does not enchance the child's beauty, in the least. However, one is thankful that this unnecessary appendage, in Mr. Harper's portrait, is neutral in tone; for, were it white, it would be simply intolerable.

Data: made in studio; February, evening; 5 x 7 Seneca view-camera; 8¼-inch Velostigmat, series II; at F/4.5; light, 400 watt Spot and 300 watt Flood; 3 seconds; Eastman Super Speed Portrait Film; metol-hydro; print; Vitava Etching-Brown K.

Beginners' Competition

IN "Light and Shade," page 331, the beholder enjoys an admirable illustration of concentrated interest, which is somewhat unusual in a wood-interior where the sun is shining brightly. To obtain this result, the camerist does not appear to have resorted to any trick or dodge, either in controlling the light—an assuredly difficult task—or in manipulating the plate or the print. Were the Editor to hazard a guess, it would be to attribute the contrast to under-exposure. Altogether, the effect produced is at once striking and artistic.

Data: March, 10.30 A.M.; sunlight; Ansco No. 3; 4⅞-inch Rapid Symmetrical; stop, 8; 1/25-second. Kodak roll-film; pyro; Carbon Velox.

"The Shades of Night," page 332, would be a pleasing composition, but for the distracting bit of water in the middle distance. The sky is exceedingly beautiful, and the rest, excepting the central spot, fairly well managed.

Data: July, 7 P.M.; sunset; No. 3 Special Kodak (3¼ x 4¼); 5¼-inch B. & L. Anastigmat, F/6.3; stop, F/11; 3-time color-screen; 3 seconds; East. Speed Film; pyro, in tank; enl. on P. M. C. bromide No. 4, with Brownie Enlarger.

Example of Interpretation

No finer illustration of the July subject for interpretation—Landscape with Figures—could be imagined than Emily H. Hayden's "The River," page 328. It suggests vividly Corot's style of painting—dreamy and imaginative. And yet, this charming picture is the result of straight-forward photography—evidently a *contre-jour* effect. Data: July; afternoon light; Spencer 6½ x 8½ Port-Land lens; used at full opening; 6½ x 8½ view-camera; 1/25 second; 26x Seed; print, Willis & Clements Platinotype; toned brown with mercury.

Our Contributing Critics

"WHERE have I seen this picture before?" is what the regular reader is likely to ask when he beholds "Fidalgo Bay," page 336. If he is endowed with a retentive memory, he may recall a picture of Mt. Chocorua, with the lake of the same name in the foreground. The setting and the lake are very suggestive of Mr. Gerhard's picture submitted for critical consideration. Data: Made at Cap Sante Anacortes; spring, 3 P.M.; sun and clouds; 5 x 7 Premo; 6½-inch Turner-Reich lens; stop, F/15; 1/25 second; Eastman Portrait Film; pyro; Iris print.

Farming is Easy

THE *Orange Camera Club Bulletin* last month had a short paragraph telling how hard it is to be a photographer. For the benefit of the public at large we quote their item: "Joe Seiler says he would rather raise potatoes than photograph, any day. When he plants potatoes, says he, he gets potatoes; but when he exposes a plate and goes through all the motions of getting a print, somebody comes along and asks him what is it and why did he do it and what did he think he was doing when he did it? 'Potatoes is potatoes,' says Joe."

A Moderate-Priced High-Speed Camera

How often we hear the cry for a high-speed Reflex when one speaks of action-pictures. Must one own a camera that costs one hundred dollars or more? I say, no! My outfit consists of a Premo Pocket C, size 3A, with a Plantograph lens, F/8, one film-pack adapter, three double plate-holders with film-sheaths for cut film, and a tripod of wood. Since making the pictures enclosed, I have added a self-timer, color-filter and sky-filter. This outfit—second-hand as much of it is, but in good shape—cost me less than $18.00. Dosen't that sound more like it for a working man?

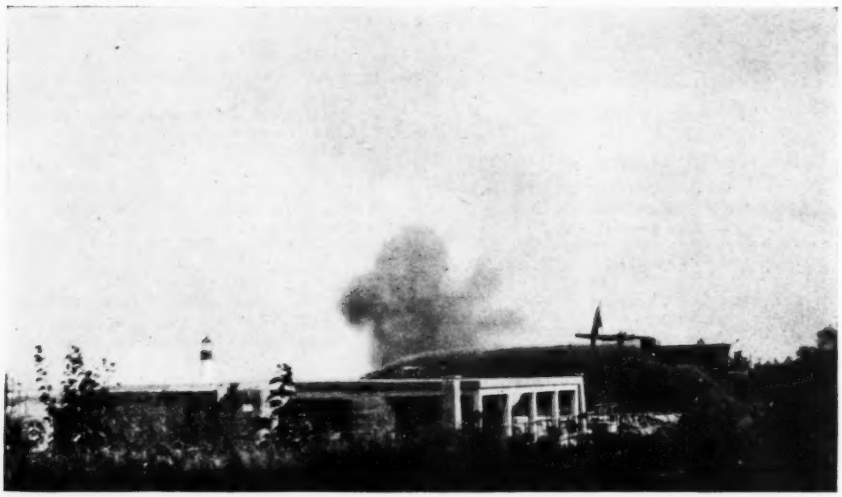
Now for the pictures I am enclosing. I will not give their location, as I think the names of Coast Defence pictures better be left out of papers and magazines, although there is no censorship. The "Big Guns" were to fire. I set up my Premo to cover the battery, "loaded" the film-pack—I must have extra films at hand—lens stopped at F/11, shutter set for 1/50 and clamped my eyes on the gun slowly rising into battery, while with my left hand I grasped the cable-release and waited for the flash and jar that was the signal for *me* to shoot.

Try standing within seventy-five feet of a ten- or twelve-inch coast-gun when it goes off, and you will realise a little of the nerve-strain on the camera-man, and the jar on the camera. These pictures I obtained will enlarge to 2 1/10 diameters, with good lines. The example here published was made at F/16, 1/25 second. Did I need a hundred-dollar machine? Another picture was snapped with my wife's Premoette Senior 3A at a different angle, and, held as a hand-camera, this shows the terrible jar to one standing even at a distance of one hundred yards from the gun.

Shots 1 to 4 were all hits, giving this gun-company 100% and the record of the district, if not the world's record for 1922. Although I claim a 100% record for my outfit—as I made four hits, which I have to thank mostly to the courage and help of my wife, who stood by and passed me the things—nevertheless, I needed and kept her Premo ready in case I required a hand-camera for quick use.

LESTER E. HIGGINS.

[We are indebted to Mr. Higgins for his kindness in furnishing the illustration and description of his camera and picture-making procedure. These practical and interesting articles are always welcomed by the Editors of PHOTO-ERA MAGAZINE.]



FIRING THE BIG GUN — LESTER E. HIGGINS

Our Contributing Critics

(*Continued from Page 337*)

should be at the right. The third group should not be in the picture, at all. A photograph made in this way would give better balance! Just imagine the group of two horses in the center of the picture not there at all. I think that it would look better as I have suggested in the latter part of my comment.

JOHN H. KEMPF.

"CONTENTMENT" is to my mind a noble attempt for a good picture with a really inadequate camera. To begin with, the artistic effect is lacking; the horses in the background seem to detract our attention from the two principal figures in the foreground. There is not enough color-contrast and, as a whole, the picture is too monotonous. A lens of longer focal length would have given us better perspective; and, with its wide opening, would have subdued the background—thus focusing our undivided attention on the two horses.

Then, again, Mr. Thompson should have chosen a better background, such as a long, open stretch of land, or a dash or two of more sky would have bettered the picture. The "pose" of the horses in the foreground is not pleasing and there is no symmetry between those in front and in the rear. They are out of proportion.

SAMPSON FEINBERG.

ON THE GROUNDGLASS

WILFRED A. FRENCH

The Way of Historic Landmarks

HAT in hand he entered our sanctum. His face betokened intellect; his appearance refinement and culture. After an exchange of greetings, the stranger said, "I am returning to England tomorrow, and shall always prize the photographs of the many historic landmarks I made during my brief stay in your beautiful city. Would you care to look at them and criticise my choice and my photography?" We assented cheerfully and were delighted to find the selection and technique quite above criticism, and said so. Nevertheless, we ventured to observe that there appeared to be two serious omissions—the birthplace of Oliver Wendell Holmes, in Cambridge, and the one of Benjamin Franklin, opposite the Old South Meeting House. "I am rather glad you mention this," explained our English visitor, "for, noticing a capital photograph of the celebrated Holmes House in my father's study, I made up my mind to photograph the original if I ever visited Cambridge, where Dr. Holmes was born and which he mentions in one of his books. But imagine my disappointment when, instead of the picturesque, gambrel-roofed house, I found only a stone-slab which marks the spot where it had stood." We then explained to the gentleman that, although noted as the birthplace of an illustrious American author and, for a long period, a distinguished member of the faculty of Harvard University, also the headquarters of General Washington during the siege of Boston, and in excellent condition, the famous landmark was demolished in 1884, by order of the Harvard authorities. The reason given for this seeming act of vandalism was that its appearance was out of harmony with the Romanesque Harvard Law School which was being erected in the vicinity! Our visitor gasped with astonishment at the recital of this news. We then went deeply into the subject, and his astonishment gave way to indignation.

"Well, as to the birthplace of Benjamin Franklin," the Englishman resumed, "I glanced at the modern building displaying on its elaborate façade a bust of the printer-diplomat, but felt no enthusiasm; so instead I photographed his fine statue in front of City Hall. By the way, as I was surveying the building labeled "Birthplace of Franklin", I noticed a man about to make a snapshot of it, when an onlooker exclaimed, "I say, that isn't Franklin's birthplace at all! It's only the building that stands where the house used to be that replaced the one where the old chap was born!"

A Sad Oversight

OUR young friend with his "best girl" helped make up the party that traveled from Boston to Wolfeboro to attend the Winter Carnival, February 22. They arrived late in the evening, for trains on the Boston & Maine Railroad were often late last winter, so there was no opportunity to view the wide panorama of lake and mountain. There were several in the party who carried cameras; and among these was our friend, who was proud of a new Panoram Kodak. His "best girl" had been to Wolfeboro before and was really enthusiastic about the views around the town. Our friend, however, was not a professional photographer. Really, he was near the foot of the snapshooter-class. However, the enthusiasm of the girl was contagious, hence his investment in the camera.

The morning of the carnival dawned clear and beautiful. The view from the house where the party were spending the holiday was magnificent. In the southwest, the lake and islands, backed by the snow-covered Belknap mountains, made a view that charmed everyone. Even our young friend waxed enthusiastic. As soon as breakfast had been eaten, our friend and the girl donned their wraps hastily, fastened on their snow-shoes, and with the new Panoram Kodak and a roll of film started out across the snow-covered fields to make pictures from the lake-shore. The first part of the trip to Lake Winnepesaukee was along a wooded road where the Panoram camera could not be used to advantage. The distance to the shore proved to be over half a mile; but the calm of the winter-morning made the cool air feel invigorating to the young couple, and the distance really didn't matter—then.

At length, they approached the shore of the lake, and came out on a little point where the panorama of the islands, mountains and frozen expanse of lake made a picture worthy of perpetuation. Our friend opened up the camera and began to insert the film. All went well. He forced the spool of film into position, carried the end of the paper across the picture-space; but when he tried to thread the end of the duplex paper onto the winding-spool—there was none! That wonderful panorama of lake and mountain was not recorded!

OVERTON.

Poor Daguerre!

A CERTAIN believer in the theory that almost anything is possible, these days, writes how some of the great inventors were persecuted. Among these, he asserts, was Daguerre, the inventor of photography. "He was incarcerated for asserting that he could impress the likeness of a human being on a tin-plate."

We would say to this erring writer: "You are mistaken, gentle Sir. Daguerre was never imprisoned—certainly not because of his wonderful discovery. On the contrary, he was honored by his (the French) government. Moreover, he never degraded his process by depositing the human image, or any other image, upon a *tin-plate*. A silvered copper-plate was none too good for him."

No Sympathy

"HAVE you any sympathy for a lame duck?"

"None whatever," replied Senator Sorghum; "any man who has energy and pull enough to get elected to Congress can easily get himself a better job."

Washington Star.

Nor would he have any sympathy for a lame crow. See March PHOTO-ERA.—Editor.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

First International Photographic Arts and Crafts Exposition, New York City

JUST at the time when the general public needed a reminder that photography was very much alive and an important factor in our social and business life, the First International Photographic Arts and Crafts Exposition was held at Grand Central Palace, New York City, April 21 to 28, 1923. As seems to be true in so many cases, there were those who said that such an exposition could not be held profitably, that the public would not be interested, that dealers and manufacturers would not exhibit and that conditions in the trade would make the exposition "a frost". However, thanks to the courage and foresight of a few, the majority today admit gladly that the recent photographic exposition was a pronounced success. Over fifty per cent. of the exhibitors have already signed contracts for next year and PHOTO-ERA MAGAZINE is glad to be one of them. Those who did not exhibit this year have indicated their intention to be part of the exposition next year. In fact, several dealers and manufacturers expressed regret that they had not been represented. Over 50,000 persons are said to have visited the exposition; and, at times, around the PHOTO-ERA booth, it seemed as if there must be twice that number. To be sure, there were some rough spots which had to be smoothed out and which were due to its being the first photographic exposition ever put on by the present management. Next year, the organisation will function more smoothly—any machinery runs better after being used for a time.

It so happened that the exposition was held at a time when our May issue was already printed so that the present issue is the first in which reference could be made to this important event. Many well-known dealers and manufacturers had tastefully decorated booths which attracted much attention. Among the newcomers in the photographic trade we were glad to meet the staff of the American Raylo Corporation, manufacturers of a new, yet practical, camera and process to make pictures in natural colors on paper. Then, too, we noted the booth of the Sept Cinema Camera Distributors, Inc., who were introducing the public to that remarkable effective Sept motion-picture camera which already has made a name for itself. Still another newcomer was the Expo Timer Company, which manufactures an exceptionally valuable device to time prints and enlargements so that all exposures may be the same in length.

The exhibition of pictures was such as to be of interest to the general public as well as to those who were pictorialists of the first rank. It was interesting to note that many of the pictures which received special mention or awards had already appeared in the pages of PHOTO-ERA MAGAZINE. The pictorial gold medal was awarded to Charles Lederle, Cleveland; silver medal to Horace C. Schimeld, New York City and bronze medal to Eleanor L. Smith, San Diego. Special awards of medals were won by Julius Hoffman, for multiple gum prints in color; by Alfred Cheney Johnston for a special exhibit; by Schuyler C. Lee, for technique in platinum printing; by J. Ernest Mack, Rochester, N.Y., for his color exhibit. Virtually all of the well-known workers were represented and thousands of visitors had an opportunity to study and to enjoy the splendid collection of pictorial and technical photographs. The awards in the portrait-class—judged by Messrs. Pirie Macdonald, Dudley Hoyt and Alfred Cheney Johnston—were: gold medal to R. T. Dooner, Philadelphia; silver medal to Kenneth Alexander, New York City; bronze medal to A. Fassbender, New York City.

The banquet of the photographic trades at the Hotel Commodore on April 26 was greatly enjoyed. A special professional entertainment was given, which was well received. There were a number of speeches made with the old adage in mind that brevity is the soul of wit. Virtually all the exhibitors, committees and officials of the exposition were present. The keynote of the speechmaking was the expression of willingness to serve and to "boost" these yearly expositions. Representatives of the leading dealers and manufacturers stated that they would exhibit again next year and offered their co-operation to make the exposition an even greater success.

There is no doubt that the First International Photographic Arts and Crafts Exposition offered the exhibitors a splendid opportunity to get into contact with several thousand prospective buyers who are deeply interested in photography. Moreover, the opportunity to meet many customers face to face and to thank them for their patronage is no small privilege to dealer and manufacturer alike. We all know that goodwill in business—intangible though it may be—is a vital factor in the success and prosperity of any enterprise. If each exhibitor did no more than obtain the goodwill of several thousand persons, he should feel well paid for the time, effort and expense to attend the exposition. As a matter of fact, from reports, virtually every exhibitor made his expenses and many realised a handsome profit on their investment. Whatever may be said, this first exposition is a beginning in the right direction. The management and committees need the active, hearty co-operation of dealers and manufacturers all over the country. PHOTO-ERA MAGAZINE has done and will do its share to make a success of these annual photographic expositions. They are good for the trade and good for us as individuals. There is much for us to learn, much that we can do to help others in their photographic problems; and, after all is said and done, by pulling together we achieve the so-called impossible. It is not too early to work for the Second International Photographic Arts and Crafts Exposition which will be held at Grand Central Palace, New York City, April 19 to 26, 1924.

Let the photographic industry assume its proper place of importance among the great industries of the United States. Let us prove to the general public that our industry can equal, if not surpass, the Auto Show, Motor-Boat Show, Home Beautiful Exposition or Chemical Exposition in beauty, interest and results. Times are changing and will continue to change. We need each other and we need unity. Let us meet each other and the public half way—there is no other road to permanent prosperity.

Seen and Heard at the Exposition

It is to be hoped that my readers will pardon my intrusion on this space to record a few things seen and heard at the recent exposition. Neverthless, to me, the exposition was very much of a personal affair. In the first place, it seemed like a reception or other gathering where one meets his friends and neighbors. In the second place, I learned much that I hope will be reflected in the pages of Photo-Era Magazine to the benefit and encouragement of every reader. All of us need awakening, chastening, encouragement, vision and determination to achieve. These things help us on the road to success. The man who thinks he knows it all has ceased to make progress. There is something for us to learn each day and that is what I did every day at the First International Photographic Arts and Crafts Exposition.

Altogether I met several hundred persons, and it was not always possible to catch or to remember the name, although I very rarely forget a face. Among those whom I was very glad to meet and who extended many courtesies to me were: Floyd Vail, William A. Alcock, Sophie Lauffer, John Wallace Gillies, Pirie Macdonald, Louis F. Bucher, Hamilton Revelle, Eliott Hughes Wendell, Warren R. Laity, H. L. Fairfield, Harry Coutant, Charles H. Davis, Prof. E. J. Wall, Alvah G. Clark, Dr. J. B. Pardoe, Otto J. Sihler, Dr. T. W. Kilmer, Dr. E. L. H. McGinnis, Merle La Voy, H. E. Jeltsch, Homer S. Curtis, Clarence A. Shedd, Herbert B. Turner, Louis A. Oliver, Will A. Towles and others.

Then, too, it was a pleasure to meet again Harold M. Bennett, Fred Schmid, George L. Barrows, John A. Andrews, J. L. Lewis, C. Shafer, Messers. Herbert & Huesgen, C. G. Willoughby, Thomas A. Riggles, H. A. Bodine, E. A. Taylor, H. Stein, Mrs. S. D. Fitzsimons, Elmer Harrold, J. Wesley Allison, Samuel Falk, Tom Hadaway, Max Rosenbloom, W. H. Temple, Philip J. Weiler, Percy Y. Howe, Chester F. Stiles, John G. Marshall, B. B. Snowden, and many others. In short, it seemed good to meet face to face the men and women with whom and for whom it has been my pleasure to work through the pages of Photo-Era Magazine.

The photographic press was represented by Frank Roy Fraprie, Frank V. Chambers, Juan C. Abel, John A. Tennant, and myself. During the entire week of the exposition, many courtesies were extended to me by my fellow editors and publishers.

An incident of interest occurred during the afternoon of the last day. A distinguished-looking gentleman was escorted to the Photo-Era booth by Samuel Falk, president of the New York Institute of Photography. After calling my attention to the gentleman's presence, Mr. Falk disappeared quietly. The stranger advanced with the remark, "You probably do not know who I am." His accent was that of an Englishman. I admitted frankly that he had me at a disadvantage. He then amazed me by saying, "I am Dr. J. Moir Dalzell who wrote you that article 'A Pearl of the Pacific' in the November, 1921, issue." He then explained that he had arrived in America, on his first visit, by the S.S. "Aquitania" on Friday, and Saturday morning he had strolled over to Fifth Avenue, where his eye caught the posters which announced the photographic exposition and were displayed on the Fifth Avenue motor-busses. He immediately found his way to Grand Central Palace and then made it a point to look up Photo-Era Magazine. The last news I had of him was from Glasgow, Scotland.

On another day, a gentleman asked if *Miss* A. H. Beardsley was at the Photo-Era booth. The question almost took away my breath. I managed to answer that I was A. H. Beardsley, without the *Miss*. The inquirer then seemed to be puzzled. Finally, he informed me that for no particular reason he had always had the impression that A. H. Beardsley was a middle-aged maiden lady!

One subscriber appeared to be rather unconvinced when I introduced myself. At length, he explained that he read my articles and editorials for a number of years and had always visualised me as a large, swarthy man with a full beard and a penchant for banging my fist on the table!

There were many other interesting and humorous incidents during the week, all of which I shall remember with pleasure and profit. The many kindly words of encouragement, suggestion and good will made a lasting impression. I was at the exposition to feel the pulse of the readers, subscribers and advertisers of Photo-Era Magazine. I came away with a deeper determination to be of greater service and to do my bit to make photography the art and science we all wish it to be. I repeat here what I said to many at the exposition, "The publisher of Photo-Era Magazine welcomes suggestions which will help him to make the magazine of greater intellectual and practical value to every reader." In conclusion, I should like to say that if every exhibitor obtained as much pleasure and profit from the First International Photographic Arts and Crafts Exposition as I did, then, the future success of these annual Photographic Expositions is assured. A.H.B.

Railroad-Pictures his Hobby

Among the many camerists that we met at the International Photographic Arts and Crafts Exposition in New York, was Mr. David Goodyear of 25 West 42nd Street, New York City. This gentleman, in all probability, possesses one of the most complete files of railroad-photographs in the United States. In fact, the Smithsonian Institution at Washington, D.C., and others have obtained a number of pictures from Mr. Goodyear's collection.

This little note is inserted to help Mr. Goodyear and his hobby. He would like to hear from any reader who has pictures of old railroad-engines of a historical character and railroad-scenes in which smoke and steam are prominent. He does not wish pictures of modern engines as he has an ample supply. Mr. Goodyear does not purchase pictures but likes to exchange with other camerists. Those of our readers who are interested, should write Mr. Goodyear and obtain further particulars about his requirements.

Frederick & Nelson Exhibition at Seattle

Dates for the fourth annual photographic exhibition, conducted by Frederick & Nelson, Seattle, Washington, have been set for November 5–17. This exhibition, which is in effect the Seattle Salon in the absence of a local camera club, is conducted by Frederick & Nelson in strict conformity with the largest salons in the East and California, and this firm's fine auditorium ensures the showing of prints under the very best conditions.

The exhibition given last November was attended by 6,000 persons and there were approximately 1,100 entries. The principal prize-winners included such well-known pictorialists as Laura Adams Armer, Berkeley, California, Karl Struss, Hollywood, California, and L. A. Goetz, Berkeley, California. A prospectus covering this year's exhibition has been prepared and will be sent at request to those interested.

B. Y. M. C. Union Camera Club

At the annual meeting of the Camera Club held at their club-rooms, 48 Boylston Street, Boston, Mass., May 1, officers were elected for the ensuing year, as follows: president, Gustav H. Seelig; vice-president, James M. Andrews; secretary and treasurer, Livingston Stebbins; member at large of the executive committee, H. H. Saunderson; House-Committee, Wm. H. C. Pillsbury, Philip A. Parmer, Francis G. Beleveau, Arthur C. Morse; Exhibition-Committee, Ralph Osborne, Herbert B. Turner, Raymond E. Hanson; Entertainment-Committee, Herbert B. Turner, Col. James M. Andrews, Rev. Ben Franklin Allen; Publicity Committee, Harold E. Almy.

Mr. Seelig is an old-time member of the Camera Club and has always been an active worker on the various committees on which he has been placed. For several years, he has been chairman of the Exhibition-Committee, and it has been due largely to him that in the past the Club has had the privilege to hang on its walls the prints of many of America's foremost pictorialists. Mr. Seelig is one of the best-known pictorialists of the Union Camera Club, and prints by him are hung in every important salon in America and Europe.

At the Club meeting of April 3 it was decided to institute monthly competitive exhibitions, the first to hang on the walls of the assembly room until the following meeting. Considerable interest was shown, and as a result twenty pictures, consisting of landscapes, portraits, etc., were hung. They were all of very excellent quality. By a vote of the entire club assembled, Mr. Raymond E. Hanson was awarded the gold star for the finest print on the walls. Each member is allowed to hang one picture, and each month there will be an entirely new collection hung and judged.

Grand Rapids Camera Club

The Twenty-Fifth Annual Exhibition of the Grand Rapids Camera Club was held April 2 to 22, 1923, at the Ryerson Public Library, Grand Rapids, Michigan. The exhibition proved to be one of exceptional merit and one which the general public could understand and enjoy. Among the workers whose pictures were hung we find: Olin J. Baker, Paul Biersdorfer, Vera and Bess Bennett, Fedora E. D. Brown, Ira Edison, A. Heidema, Clara Joyce, Arthur G. Kalmbach, Ransom W. Luce, Rita Brackett Luce, Lillian S. Pomeroy, Frederick C. Ruppel, Raymond B. Ryan, Vesta Shimel, A. Steenhagen, Charles Vandervelde, Eleanor W. Willard, Alden H. Williams, Loa G. Winegar and Hazel N. Zellner. The present officers of the club are: president, Raymond B. Ryan; secretary, Loa Winegar; treasurer, Lillian Pomeroy; and director, Dr. Alden H. Williams.

Schools of Photography

To the question—so frequently asked of the Editor—whether there are any good schools of photographic instruction in Boston, U.S.A., there should be an emphatic "No!" To be sure there are places the owners of which pretend to give instruction for a stipulated charge; but either the proprietor is generally away on a job, leaving the office in charge of some individual who will give the applicant, after he has paid the fee, a little talk on photography, or else it's a scheme to sell the pupil an outfit and materials on which the "instructor" makes a profit. This publication has advised applicants for photo-instruction to avoid these alleged photographic schools in Boston, and, if convenient, to join the Union Camera Club of Boston, 48 Boylston Street, which costs $13.00 the first year, and $10.00 each succeeding year. By so doing, they will come in contact with members, fine fellows and experts in all the technical operations of photographic practice as well as in every branch of the art. They are willing to help inexperienced fellow-members to improve their work and to counsel them wisely if desirous to enter the professional field. The New York schools of photography, advertised elsewhere in Photo-Era Magazine, offer unusual advantages to those who prefer to acquire their experience by a wholly systematic method.

Professor Louis Derr

It is our sad duty to record the death of Louis Derr, A.M., S.B., professor of applied optics and photography at the Massachusetts Institute of Technology, which occurred May 10, at his home in Brookline. Besides thousands of M. I. T. alumni scattered throughout the world, photographic workers generally—including readers of Photo Era Magazine—will recall Professor Derr as the author of the well-known standard textbook, "Photography for Students of Physics and Chemistry," universally regarded as one of the best books on the subject in the English language. Professor Derr will be greatly missed as an able, conscientious and popular instructor at Technology, and also by the Editors of this magazine, who enjoyed his friendship and personal interest. Professor Derr was a fellow of the American Academy of Arts and Sciences, and of the Royal Photographic Society of Great Britain, a member of the American Physical Society, the Optical Society of America, the University Club of Boston, and the Phi Beta Kappa and Delta Upsilon fraternities. He is survived by his widow and a son, Thomas S. Derr of Brookline, an instructor in mechanical engineering at Technology. He died at the age of fifty-five.

Artistic Photography at Cleveland

A group of photographs showing gratifying artistic quality was included in the Exhibition of Work by Cleveland Artists and Craftsmen, shown at The Cleveland Museum of Art during the month of May. Although the number exhibited was smaller than in preceding exhibitions, the standard was extremely high and indicated a real growth in artistic feeling. The subject-matter was varied and included portraits, figure-studies, landscapes, marine-views and architectural subjects. The first prize in landscape was won by Edd A. Ruggles, for an interesting "Water-Study"; the second by Carle Semon for "Branches and Roofs", and the third by Charles Lederle for an industrial subject, "Waste". Walter P. Bruning and Marie Riggins received honorable mention in the landscape-class. In portraiture, first prize went to Ann Anthony Bacon for a study of child-life, "Jane", and the second to Mary E. Raymond for a quaint, old-fashioned portrait, "The Necklace." I. T. Frary.

A Rare Business-Chance

A man, preferably one of middle age or younger, with the requisite capital and eager to engage in an agreeable and profitable business, can do no better than to investigate the photographic opportunity advertised in the latter part of this issue. It is a brilliant chance for the Amateur or Professional photographer having the necessary qualifications.

LONDON LETTER

CARINE AND WILL CADBY

LORD CARNARVON, who died on April 5, in Egypt, has been prominently before the public since last November, when he and Mr. Howard Carter discovered the tomb of King Tutankhamen in the Valley of the Kings. But photographers have long been familiar with Lord Carnarvon's name, for he was well known as a distinguished amateur photographer. Some years back, we remember to have seen a picture of his called "The Dust of Ages." It represented the subject in which he has so long been deeply interested, viz., excavations in Thebes. The view gave a dust-storm with a massed crowd of natives. As recently as 1921, he had a picture in the Salon with the title "The Valley of the Kings", which can hardly fail to become as historically important as the actual scene of his great discovery last autumn.

But his photography was in no way limited to the pictorial representation of the country where his absorbing archæological work was carried out, for he has shown many poetical and dramatic studies, true to life, and yet imbued with an original viewpoint, and perfect in technique. He was a man of many interests as far apart as horse-racing and the collection of antiquities. Any small relic of superlative excellence in style and fabric, irrespective of period, appealed to him, and he had amassed a cabinet of first-rate artistic quality at Highclere, besides having contributed extensively to museums. Lord Carnarvon was President of the London Camera Club in 1916, and with his energy and interest infused it with new life. As recently as January last, he presided at a meeting there and gave the first account of the discoveries in the tomb of Tutankhamen.

The twenty-fifth Photographic Fair has come and gone. It was, no doubt, the largest and most comprehensive show yet held, and the new quarters at Holland Park Hall certainly increased its dignity; for although there was more than usual to look at, the space was adequate, and one did not have that cramped, crowded feeling that was so evident in the old building. The carefully carried out sets of differently developed and exposed negatives should be an object-lesson to amateurs, if only they did not, in increasing numbers, hand their work over to professionals to develop, who, of course, know all about the subject, but are doomed to failure with so much of the film they are asked to develop because of faulty exposure. A good illustration of the benefits of panchromatic photography was to be seen. Photographs of an object, which was itself on view, were shown, made both with ordinary and panchromatic plates, so the data for the study of the subject were complete. In going around a show of this kind the old photographic hand has sympathy for the beginner, for he knows how much of the seemingly mysterious apparatus must be quite unintelligible at first, and the smooth and facile explanations of the stall-holders are, to a brain not yet initiated, of little help. It is rather like learning to drive a motor, from the early stages of which we are at present suffering. The "clutch" is still a viciously disposed mystery—on the road, and the reproachful scream of the engine at mismanagement on our part, is worse, certainly far worse than any retributive acts of the most complicated photographic apparatus, which at least marks its displeasure at our incompetence in silence.

The beginner was more at home when he reached the collection of Spirit-Photographs, of which there were quite a number. Here, everyone had a right to his opinion, and, we noticed, seemed to be exercising it. We could laugh at, or be serious over, the exhibits, according to our convictions, photographic or otherwise, and, needless to say, they formed a corner for heated argument. The prints were lent by students of psychic science, so there was good reason to take them seriously.

Air-Survey and Archæology was the title of a lecture given by Mr. O. G. S. Crawford to the members of the Royal Geographical Society last month, in the course of which the lecturer stated that aerial photographs provided a new instrument of research second only to excavation in the results they would achieve. As revealers of almost vanished earth-works they were superior in every way to observation on the ground. We might tramp across ploughed land and not have a suspicion that there were earth-works below the surface; but the "snap" from the air will reveal the secret.

Photography from the air is rapidly developing, as can be seen in the pages of the illustrated press, where, quite a little while back, an aerial photograph was a novelty. But now they are numerous and even used by advertisers. One wonders what it will lead to. Will the future pictorialist employ his private and most portable plane or glider as the tripod for his air-camera, and soar away into space at dawn or sunset to seek his favorite effects? Perhaps we are nearer such events than we think, for news comes from Paris that gliders equipped with auxiliary engines are soon to compete both in practicability and price with the small motor!

A big exhibition is being organised in Turin by the Board of Trade. It is to be under the patronage of the King of Italy, and will be open during the months of May and June. There will be three groups: General Photography, Optics and Kinematography, and it welcomes the amateurs, professionals and the manufacturers of the whole world. Group I. is divided into seven classes, beginning with Artistic Photography and ending with photographic schools, societies and journalism, and between these classes there is found a place for every kind of photographic effort—from the making of cameras to ancient curiosities of the craft. Altogether it looks as if this is to be a serious and comprehensive adventure on the part of Turin, and it cannot fail to do good to the photographic and allied trades of the country.

The Imperial Plate Company has just issued its hand-book. Its plates are famous the world over for quality, and the little book it publishes annually is usually filled with absorbing matter for amateurs. This year, there is a lucid account of the three chief lenses which interest the photographer. Diagrams are given that enable the beginner at a glance to grasp the difference between the single, or landscape, the ordinary doublet or R. R., and the modern anastigmat lens. The Imperial Company has begun to make roll-film, and has also introduced a graduated filter.

(*Continued on page 346*)

RECENT PHOTO-PATENTS

Reported by NORMAN T. WHITAKER

THE following digest of patents is reported exclusively for PHOTO-ERA MAGAZINE from the patent-law offices of Norman T. Whitaker of Whitaker Building, Washington, from whom copies of any of the patents may be obtained by sending twenty cents in stamps. The patents listed were issued during the month of April from the United States Patent Office, the last issues of which have been disclosed to the public.

Process of Making a Colored Photographic Image patent, number 1,450,412, has been granted to Leon F. Douglass of San Rafael, California.

Photographic Film with a Carrier Permeable to Water patent has been issued to Jaques E. Brandenberger of Paris, France, number 1,450,479.

An invention on a Lens Shade, number 1,450,522, has been patented by Ray L. Stinchfield of Rochester, N.Y., and assigned to the Eastman Kodak Company.

A Camera Attachment has been patented by Arlie Payne of Paragould, Ark., number 1,451,956.

William C. Huebner has patented an invention for an Apparatus for Positioning the Printing Plates on the Plate Holders of Photographic-Printing Machines, number 1,452,078.

A new Camera has been invented by Vincent Calabrese of Brooklyn, N.Y., for which he procured a patent, number 1,452,413.

Patent, number 1,452,719, for a Light-Controlling Device for Photographic-Printing Machines was issued to William D. Wood of Seattle, Wash., and assigned to Specialty Manufacturing Co.

A patent for a Process for the Production of Sensitive Films for Photographic Purposes has been granted to Jaques E. Brandenberger of Paris, France, number 1,452,785.

A Film Holder has been patented by Chester S. Howland of New Bedford, Mass., number 1,453,244.

A Process of Making a Contract Transfer Printing Surface with a Colored Emulsion has been patented by Robert John of New York, N.Y., number 1,453,258, and assigned to Daylight Film Corporation.

A patent for Many-Colored Screen for Photography has been issued to Isidor Kitsee of Philadelphia, Pa., number 1,449,417.

A Camera has been invented and patented by Hart H. McNaughton of Marysville, Tenn., number 1,449,429.

A Printing-Box has been patented by Fred Smith of Mount Vernon, Indiana, number 1,449,788.

A patent for Photographic Transfer Paper has been granted to Haruki Egashira of Tokyo Fu, Japan, number 1,450,067.

Bromoil Brushes

THE brushes used in the bromoil-process should be carefully chosen, and only those of the best quality purchased, advises *The British Journal*. Cheap and inferior brushes, made possibly from an unsuitable hair, although they may appear satisfactory at first, quickly begin to shed small pieces of hair, which adhere to the surface of the print. These hairs cannot be removed until the print is dry, when it will be found that each hair leaves a little white mark on the print. It is very difficult to cover these up correctly, as the ink has to be diluted to match the actual tone of the print, and, as the lines are usually all over the print, it is better to try to avoid the cause of the defect. It is far better to pay a little more, at first, and obtain brushes of the highest quality, than to have to resort to the troublesome means of cleaning a print after it has dried. In portraits by this process the cleanest possible print is required, and only the best brushes specially made for the process should be used. But it sometimes happens that a brush of the best quality is shedding hairs and the quality is blamed. However, in a case of this kind it is usually the worker who is at fault. After a print has been inked, the brush should be immediately cleaned in either gasoline or carbon tetrachloride, and when free of ink should be further washed in soap and cold water. The solvent used to wash out the ink dries the hairs, and so these become brittle and break off during inking. The soap-and-water wash prevents this, and the brush retains its usual "springiness." The brush should, of course, be allowed to become perfectly dry before being used again.

[As the best brushes are scarce and very expensive—$10 to $38 each, according to size—excellent substitutes, at moderate prices, are offered by reliable dealers and used by bromoil-workers with highly satisfactory results. The advertisements of several responsible firms who carry a complete line of bromoil-materials will be found elsewhere in this issue.—EDITOR.]

Americans—Know Your Country!

KNOW your country. Know its beginnings, the origin of its institutions, the achievements of its heroes and sages in public and private life. While the ultra radicals who would tear down the structure of American Government point out the defects of our institutions, learn something about their points of strength and test the wisdom of the changes proposed in the light of that human history, experience and recorded wisdom which demagogues so much despise. Then, and then only, will you be capable to exercise intelligently constructive, helpful, patriotic influence in politics and public affairs.—*National Republican.*

London Letter

(*Continued from preceding page*)

Kodak have at last brought out a contrast bromide paper for use with weak negatives. Their Nikko is excellent for press-work if the negatives are of average quality, giving splendid gradation; but up till now, to get the best out of a poor, weak negative, Illingworth "Contrasty Press" or a similar English paper had to be employed.